Sutton Biodiversity Action Plan 2010 - 2015

take part, take pride

Sutton

Executive Summary

This Biodiversity Action Plan (BAP) is a plan for action to conserve, protect and enhance wildlife in the London Borough of Sutton. It will do this by achieving measurable targets for priority habitats and species over the next five years. Following wide consultation the priority habitats are:

- Woodland and Scrub
- Parks and Open Spaces
- Rivers and Wetlands
- Private Gardens
- Allotments
- Chalk grassland

Although the list is not exhaustive, the priority habitats were selected as they are national, regional and local habitats at risk, areas important for rare species, as well as culturally valued and characteristic habitats of Sutton. However, this plan does not just seek to conserve those species that are rare or endangered; declines of more widespread or common species require our action too. Within this BAP a Species Action Plan has been prepared for bats (all UK species) as the requirements for their survival are complex, crossing over habitats not covered in this plan.

Measurable targets aim to maintain, improve and extend existing habitat types and to raise awareness of the importance of these habitats.

It follows on from the strategic framework for biodiversity in the UK, from its initial commitment to protecting and enhancing wildlife and habitats at the 'Earth Summit' in Rio de Janeiro in 1992, where the UK was one of the signatories of the Convention on Biological Diversity, through to the establishment of a UK Steering Group setting nationwide objectives, habitats and species for priority action. This culminated in the development of local biodiversity action plans to implement actions and raise awareness at a local level.

The BAP will contribute toward Sutton's aim to become London's most sustainable suburb – a place where people want to live and work for its excellent quality of life as outlined in our One Planet Action Plan. One planet living is our vision of a sustainable world, in which people everywhere can enjoy a high quality of life within the productive capacity of the planet.

Ecological footprinting shows that if everyone in the world consumed as many natural resources as the average person in the Sutton, we would need three planets to support us. There is a clear link between the increase of humanity's ecological footprint and loss of biodiversity.

This BAP is the culmination of partnership work involving innovative means to incorporate the views of a wide range of partners, including statutory and non-statutory organisations and people living in Sutton.

It will achieve its aims by engaging local people, through inspiring and supporting local ownership and local action. It will stimulate, encourage and publicise the many efforts being made at all levels to halt biodiversity decline. Ultimately to make the biodiversity process work we must make a difference at a local level. Across Europe a resolution has been made to halt biodiversity loss by 2010. The local BAP is Sutton's commitment to achieve that goal. Progress has been made towards achieving the goal; however it is clear that on a European, and global, scale biodiversity loss will continue to happen beyond 2010.

2010 is the International Year for Biodiversity to raise public awareness to the importance of biodiversity and the consequences of its loss. The BAP delivers this "bottom up" approach with specific actions for local awareness raising and habitat creation and improvement.

The development of new targets in the BAP presents an opportunity to celebrate past successes but also presents a vision for a future beyond 2010.

Acknowledgements

We would like to thank members of the Sutton Biodiversity Partnership for their assistance, advice and guidance in the production of this Biodiversity Action Plan. In addition we would like to thank all those who provided comments, advice and guidance, and of course the partners who have committed to supporting and implementing the actions, without which this plan would not achieve its potential to make a real difference to conserving and enhancing Sutton's wildlife and wildlife habitats.

Sutton's Biodiversity Partnership was established in 2004 to prepare, consult on and implement the action plan for the protection, conservation and enhancement of Sutton's biodiversity. The Core Partnership who helped to develop the targets 2010 -2015 included:

Downlands Countryside Management Project/Old Surrey Downs
EcoLocal
Environment Agency
Greater London Authority
London Biodiversity Partnership
London Borough of Sutton
London Wildlife Trust
Sutton Nature Conservation Volunteers
Wandle Trust

The full list of partner organisations in the Sutton Biodiversity Partnership to develop the BAP also includes:

Bat Conservation Trust
Beddington Farm Bird Group
Belmont Allotments Society
Butterfly Conservation
Cheam Park Paddock Allotments
Forestry Commission
Friends of Beddington Park & The Grange
Friends of Royston Park
Greener Schools Support Network
Greenspace Information for Greater London
Gander Green Lane Allotments
London Bat Group
Roundshaw Allotments & Leisure Group
Sutton Environment Network Wildlife and Land Use Working Group
Surrey Organic Gardening Group
The Warren Allotments
Woodland Trust

For further information

To get involved or for further information please contact:

The Biodiversity Manager
London Borough of Sutton
Tel: (020) 8770 5000
Website: www.sutton.gov.uk.

Contents

List of Figures

Introduction

1. What is Biodiversity?

Biodiversity or biological diversity simply means the 'variety of life'. This includes all life, in its various forms such as animals, plants, fungi even bacteria and viruses. It encompasses the diversity of species, genetic variability within a species, together with the diversity of and interactions with their environment.

2. Why do we need to conserve biodiversity?

If ever we need a motivation for conserving the variety of life then there is the glaring evidence of the unabated loss of biodiversity, and the consequences of that loss. The main threat is massive human population growth, causing increasing land and resource use. Globally, human activities such as unsustainable forms of agriculture, industry, recreation and international commerce are the main threats to biodiversity. These activities have exacerbated climate change and flooding. Together, they have caused rapid loss and fragmentation of habitats, and elevated extinction rates of species and local populations. However, it is important to recognise that biodiversity is not static: it is a system in constant evolution. Indeed 99% of the species that have ever lived on earth are extinct today. In spite of this it is the current rate and manner of extinction caused by human activities that concerns us. Current species extinction rates are of the order of 100 to 1000 times greater than 'natural' extinction rates (Vitousek *et al*., 1997).

We depend upon biodiversity to sustain our lives by regulating and stabilising ecosystem processes. Halting biodiversity loss has an economic benefit preventing the loss of potential foods, medicines, industrial products, and enhances tourism opportunities. A healthy natural environment contributes to climate change mitigation and flood relief. Biodiversity also enriches our lives through physical, educational and social interaction and aesthetic appreciation. If biodiversity is lost, then consequently the quality of human life declines.

3. The History of the Biodiversity Action Plan Process

In 1992, the Convention on Biological Diversity (the Rio Convention) was signed by 167 governments at the Earth Summit in Rio de Janeiro. It was the first treaty to provide a legal framework for biodiversity conservation. It called for the creation and enforcement of national strategies and action plans to conserve, protect and enhance biological diversity.

In response the UK Biodiversity Steering Group (now replaced by the UK Biodiversity Partnership) was created in 1994 and published the framework and criteria for identifying species and habitat

types of conservation concern. In 2007 the UK BAP review published a new list of 1150 priority species and 65 habitats. The current UK BAP structure, overseen by the UK Biodiversity Partnership, has the aim of bringing together all the partners involved in or with an interest in the UK Biodiversity Action Plan, in policy on biodiversity, and to co-ordinate action that should be taken forward at a UK level.

Today there are are over 200 Local Biodiversity Action Plans (LBAPs) in all four UK countries, and new plans are still being developed.

In addition to the BAP priority habitats, in 2006 the Natural Environment and Rural Communities Act Section 41 published a list of 56 habitats and 943 species which are of principal importance for the conservation of biodiversity in England.

The Section 41 list is used to guide decision-makers such as public bodies, including local and regional authorities, in implementing their duty under section 40 of the Natural Environment and Rural Communities Act 2006, to have regard to the conservation of biodiversity in England, when carrying out their normal functions.

In recognition of the need for a London approach, the London Biodiversity Partnership (LBP) was established in 1996 to begin a new biodiversity planning agenda for London. It has published the London Biodiversity Audit in 2000 and an Action Plan in 2001.

The Mayor of London produced a Biodiversity Strategy in July 2002, setting out a broad framework for Biodiversity in London. The priority habitats and species identified in this BAP accord closely with the objectives of the Mayor's Strategy.

The Mayor is encouraging London Boroughs to work towards the principles and proposals set out in his London Biodiversity Strategy, by producing their own Local BAPs. In addition, the Government, through Circular 04/01 advises Councils that BAPs should form an integral part of a local authority's Community Strategy. Our Community Strategy contains an action and target on biodiversity. Local BAPs reflect the values of local people, cater for local distinctiveness, and are key to the successful delivery of both the UK, and the London Biodiversity Targets.

4. What is Sutton's Biodiversity Action Plan?

A Local Biodiversity Action Plan is a plan of action for protecting, conserving and enhancing wildlife at a local level, using measurable targets. A BAP is far broader than a local authority nature conservation strategy, involving a large number of statutory and non-statutory organisations in its development and implementation. Although 74% of people in the EU rate the environment as being important, there is a sizeable population who neither care nor know about biodiversity. Biodiversity Action Plans are about mobilising a message, popularising our language. This plan will engage more people and convince more

people that biodiversity is important in our daily lives, and that biodiversity matters for human well-being.

5. The Sutton Biodiversity Action Plan Partnership

Sutton has set up a core partnership, in line with best practice, to have equal representation in the decision-making process. The core partnership includes Statutory Authorities (London Borough of Sutton, Greater London Authority, and the Environment Agency); nature conservation organisations (London Wildlife Trust, Sutton Nature Conservation Volunteers, Downlands Countryside Management Project, EcoLocal, Wandle Trust) to provide a range of expertise, knowledge, and specialist resources necessary for the development of a BAP. The local Council acts as 'lead-partner' as it is often the main land-owner in the Borough, but also acts as secretariat, provides resources, and can provide funding. Sutton is proud of its reputation as the fairer, safer, greener Borough. We realise that the conservation of wild flora and fauna is central to our future where our green spaces are flourishing, bursting with diverse plants and animals, well used, understood by the community, and protected from development.

5.1 Aims and Objectives

The core partnership has agreed the following aim and objectives for Sutton's Biodiversity Action Plan:

Aim:

To ensure the conservation, protection, and enhancement of biodiversity in the London Borough of Sutton, for current and future generations.

Objectives:

- To produce an audit of biodiversity within the Borough
- To determine species and habitat priorities within Sutton, with regard to both national and London targets and to wildlife valued by local people, and to correlate them with those of neighbouring boroughs
- To develop and implement a long-term plan for protecting, conserving and enhancing Sutton's biodiversity – a Biodiversity Action Plan
- To identify indicators of sustainability, and develop both targets and a means of monitoring the progress of the plan
- Throughout the process to raise awareness of biodiversity issues, and improve availability of information to the people of Sutton
- To encourage practical involvement in biodiversity conservation projects by local people

5.2 Ecological Audit

The core partnership has made an assessment of the habitats and species found in the Borough, using its knowledge, expertise and existing ecological data – an ecological audit. From this, the core partnership drew up a list of

candidate habitats and species, with reference to national and London priorities and local values.

5.3 Selecting Priorities

In London, our knowledge of habitats and their status is much better than that of individual species. Therefore, it is more practical to first develop action plans for habitats, the theory being that species will 'look after themselves' if the habitat is of suitable quality and size. However, where a species has significant local conservation value it may warrant a specific action plan. Species can also be used to increase public awareness ('flagship'), or to publicise and promote the activities of the BAP, especially if they are of local significance. A prioritised short list of habitats was developed as a result of extensive consultation with experts and interest groups. The list of prioritised habitats has been reviewed for the Biodiversity Action Plan 2010 -2015, and comprises the following habitats:

- Woodland and Scrub
- Parks and Open Spaces (now including the former Cemeteries and Churchyards HAP)
- Chalk Grassland
- Rivers and Wetlands
- Private Gardens
- Allotments

Following consultation with ecological specialists within the Core Partnership it has been decided to develop a single SAP. The SAP is for all Sutton's bat species, as the ecological requirements and conservation problems faced by all London's species of bats are believed to be generally similar. Any measures proposed are likely to be of benefit to a number of species. Their ecological requirements encompass a range of roost, breeding and feeding sites that preclude their association with any one habitat type, necessitating a stand alone SAP.

Furthermore, this partnership has agreed Habitat Action Plans (HAPs), Species Action Plans (SAPs), and Generic Actions (such as publicity), that together make up the BAP.

5.4 BAP Consultation

Consultation has been co-ordinated through the Sutton Environment Network's (SEN) ' Wildlife and Land Use Working Group (WLUWG), that includes ecological professionals and interested individuals. The group comprised 64 individuals or societies well placed to implement and promote BAP objectives, as directed by the core partnership. A full list of partner organisations can be found at the front of this publication.

Successful and innovative approaches and techniques were undertaken to improve stakeholder involvement in the biodiversity action planning process.

Although the BAP process seeks to ensure that everyone's input is equal, and reflects their opinions and interests, a balance is struck to ensure that the habitats and species selected take into account popular, as well as scientific opinion.

The selection of priority habitats and species for action is based upon robust ecological principles, and baseline information derived from national and regional guidance; such as habitats for which the UK has international obligations, habitats at risk, and areas important for key species. However, it should be recognised that what the public sees as important may be different from what some experts see as important. For example, a local priority is not required to have international importance, nor be based on rigorous scientific methodology, but still may have merit. That said, in the final assessment habitats and species priorities need to have some scientific rigour.

5.5 Setting and Devising Targets

Integral to a BAP are measurable targets for priority Habitat Action Plans and Species Action Plans set against clear timescales. When setting timescales, it is important to allow for programmed reviews and monitoring every five years.

The targets and actions in Sutton's Biodiversity Action Plan 2010 -2015 have been developed by the Sutton Biodiversity Partnership Core Group.

5.6 Delivery

The Core Group drives the whole process and other partners; in particular the Sutton Environment Network (SEN) Wildlife and Land Use Working Group will be the key delivery mechanism. Delivery of the BAP actions is through consensus and community involvement.

Individual members of the public, organisations and groups, are encouraged to get involved in delivering the actions in the HAPs and SAP and to join the Sutton Biodiversity Partnership.

5.7 Monitoring and reviewing

Monitoring is an essential and integral part of the BAP process. It enables a greater understanding of the conservation status of species and habitats, and measures the success of the BAP as a whole. The partnership will produce a reporting programme every five years so that progress is monitored, and further actions suggested if a species or habitat is under threat. Each review should be set against an overall 25-year target; this is where the need to have constantly updated drafts of the Plan comes into relevance. This is the required period, in ecological terms, to judge the success of a project. Annual progress reports will be produced to demonstrate progress towards Action Plan targets.

5.8 Countdown 2010

As part of the international activity, European Governments have made a commitment to halt the loss of biodiversity within the European Union (EU) by 2010, through their European Community Biodiversity Strategy. They recognise the need to halt biodiversity loss, and have agreed cross-sectoral objectives and targets to achieve this.

The BAP, and the proposed actions contained within it, aim to contribute towards the UK and EU commitment to halt the decline of biodiversity. However, it is clear

that halting biodiversity loss has not been achieved. Sutton's BAP has, however, contributed to the target on a local level and will continue to do so. The review aims to achieve a "bottom up" approach with specific actions for local awareness raising and habitat creation and improvement.

The development of Sutton's new BAP targets coincides with the International Year for Biodiversity 2010 to raise public awareness of the importance of biodiversity and the consequences of its loss.

5.9 Strategic Planning & Development

Habitats or species listed as priorities by Local Biodiversity Partnerships are capable of being a material consideration in the preparation of local development documents, and the making of planning decisions. Information generated by the BAP will assist the planning process, by providing more detailed information as a basis for revision of development plans. Conversely, statutory plans will make a significant contribution to delivery of local biodiversity targets.

As local development documents are revised, local authorities should increase integration of BAP objectives. Flexible approaches and mechanisms need to be incorporated into local development documents so that biodiversity objectives can be adopted into the social, economic, and environmental elements.

Planning Policy Statements (PPS) set out the Government's national policies on different aspects of land use planning in England. Both Planning Policy Statement 1: Delivering Sustainable Development, and Planning Policy Statement 9: Biodiversity and Geological Conservation, seek to promote the conservation and enhancement of wildlife species, habitats and biodiversity through the planning process.

6. Sutton's Biodiversity

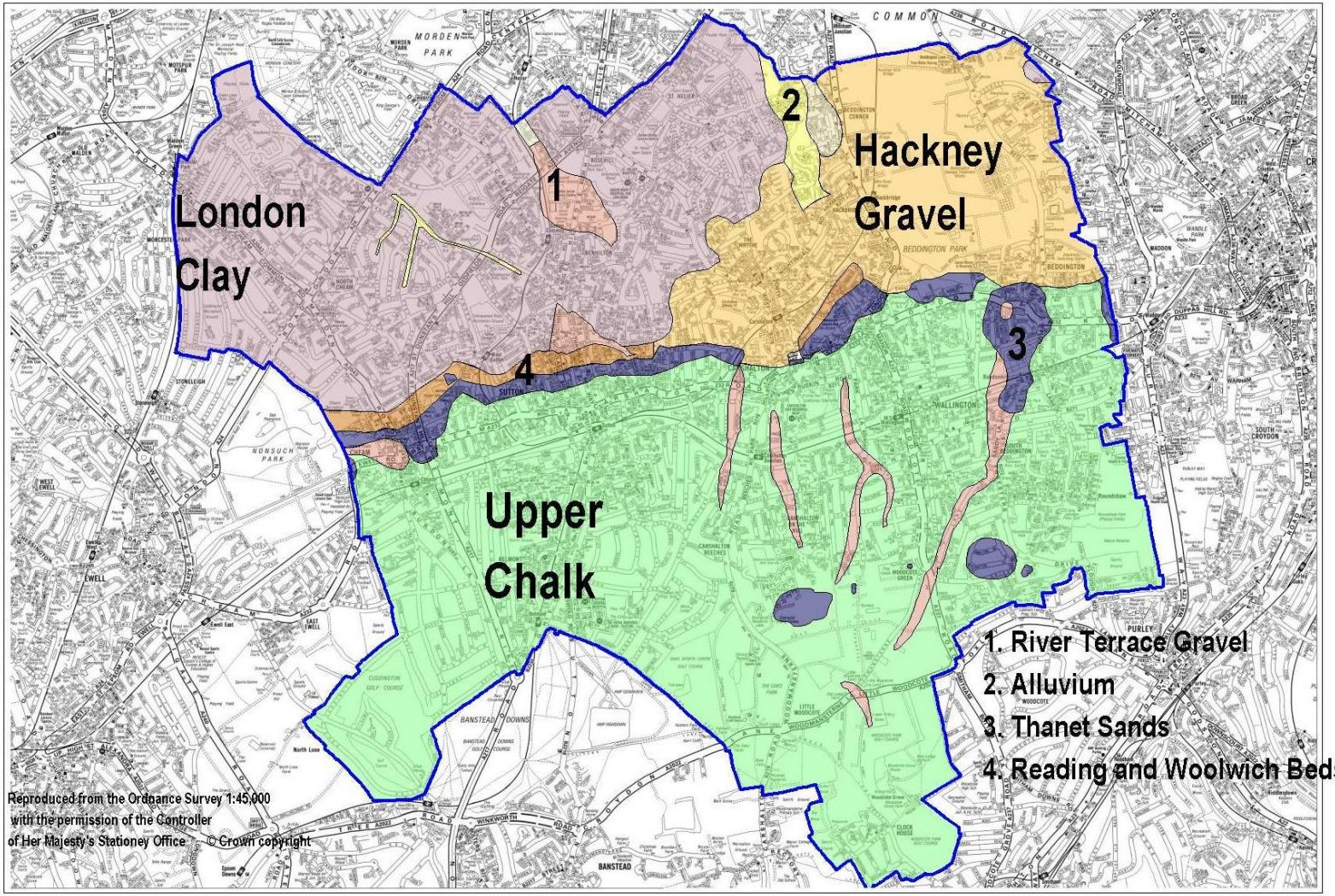
Sutton contains an impressive array of wildlife and there is much to celebrate. Nationally declining or rare species such as the small blue butterfly *Cupido minimus*, flowering plants such as the greater yellow rattle *Rhinanthus angustifolius*, invertebrates such as the stag beetle *Lucanus cervus*, and birds such as the skylark *Alauda arvensis*, and probably the largest population of the tree sparrow *Passer montanus* in the country, all make their homes in Sutton. However, it is not just the rare or uncommon that we should protect. Common or familiar species such as blackbirds *Turdus merula*, robins *Erithacus rubecula* and foxes *Vulpes vulpes*, are integral to UK biodiversity.

Sutton's natural character is influenced by its geology. In the southern half of the Borough, the underlying geology is chalk. Chalky soils are always alkaline and very free-draining, which restricts the type of plants that can grow on them. In the north east, river terrace gravels predominate. These gravels are important in the building industry and their extraction has had a huge impact on the landscape of the area. Current proposals are to restore

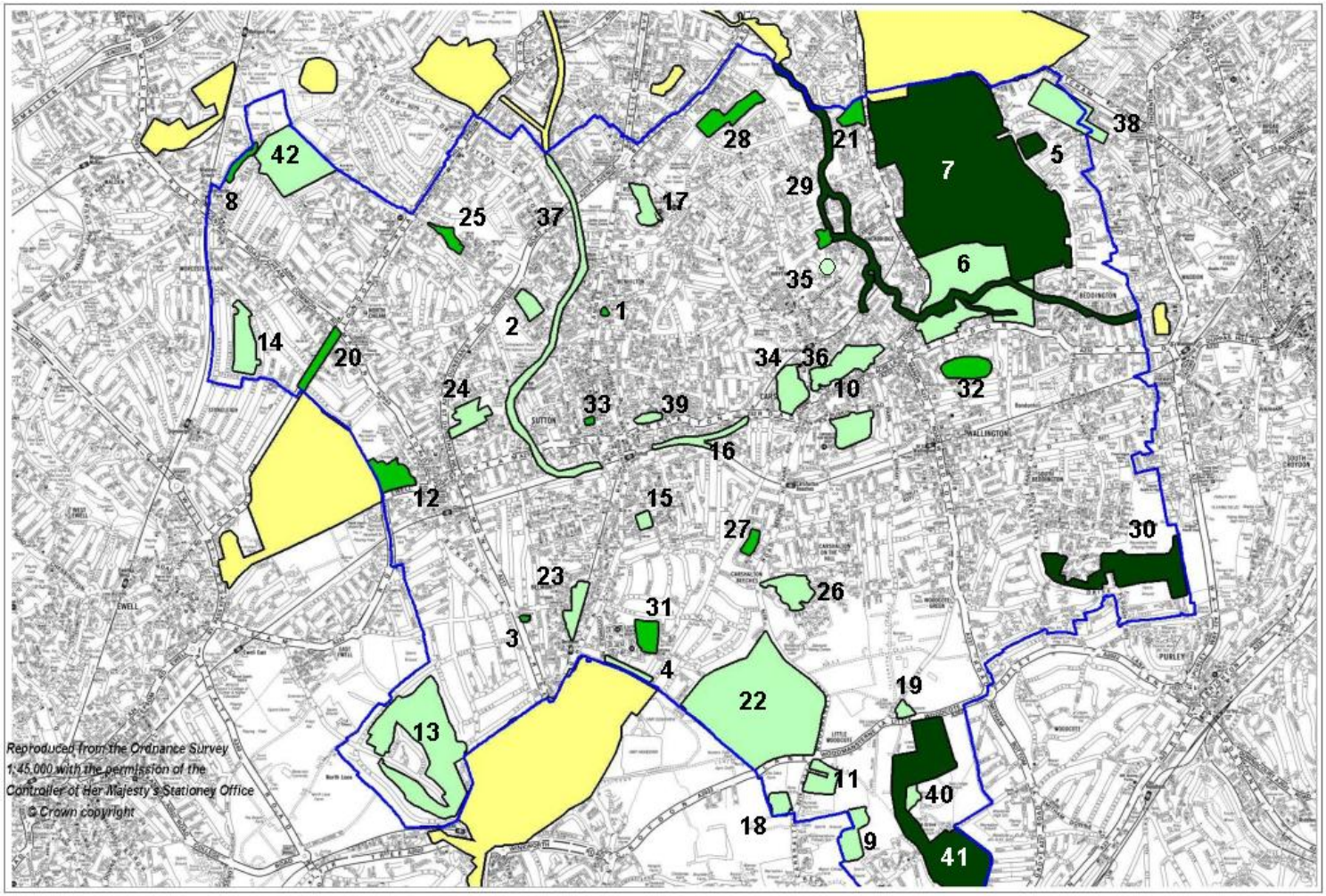
the 92 ha Viridor Landfill site, which covers a significant proportion of the river terrace gravels as a site of nature conservation by 2023 as part of a wider Wandle Valley Regional Park. The north west of the Borough is dominated by London clay, a heavy, neutral soil that holds a lot of water and is again colonised by characteristic plants. The chalk spring fed river Wandle, the Beverley Brook and Pyl Brook support a rich diversity of invertebrate life and fish species. Chalk Rivers are subject to a national Biodiversity Action Plan, because of their characteristic plants and animals and threats to their vitality.

The mainly urban setting in the northern half of the Borough does not prove to be an obstacle for many forms of wildlife to live and flourish. However, where habitats are fragmented or isolated from one another, this can lead to local extinctions. This BAP aims to build upon existing habitat and wildlife information acquired as part of wildlife surveys, such as the Phase 1 Habitat Surveys 2006. These have since been added to by the endeavours of the local authority, and the many dedicated statutory and non-statutory conservation organisations operating in the Borough.

Map: Underlying geological strata in Sutton



Map: Key nature conservation sites (February 2010)



Key to site numbers in Figure 2.

	Site	Ref
1	All Saints Churchyard, Benhilton	L
2	Anton Crescent Wetland	BII
3	The Avenue Primary School Nature Garden, Belmont	L
4	Banstead Downs	BI
5	Beddington Lane Paddock	BII
6	Beddington Park and St Mary's Churchyard	BI
7	Beddington Sewage Farm	M
8	Beverley Brook and Back Green, Worcester Park	L
9	Big Wood and Ruffett Wood	BI
10	Carshalton Ponds, The Grove and All Saints Churchyard	BII
11	Carshalton Road Pastures and Grove Lane	BI
12	Cheam Park	L8
13	Cuddington Golf Course and Cuddington Hospital	BI
14	Cuddington Recreation Ground	L
15	Devonshire Avenue Children's Playground	BII
16	East Surrey Railway Lines (The Warren)	BII
17	Greenshaw Wood	BI
18	Lambert's Copse	BII
19	Little Woodcote Wood	BII
20	London Road Edge, North Cheam	L
21	Mill Green	L
22	The Oaks Park and Golf Course	BI
23	Old Belmont Hospital Site	BII
24	Perretts Field and Sutton Water Works	BII
25	Pyl Brook, Stonecot	L
26	Queen Mary's Hospital Wood and Wellfield Plantation	BII
27	Radcliffe Gardens Woodland	L
28	Revesby Road Wood	L
29	River Wandle	M
30	Roundshaw Downs	M
31	Royal Marsden Hospital Grassland	L
32	St Mary's Court, Bute Road	BII
33	St Nicholas Churchyard, Sutton	L
34	St Philomena's Lake	BII
35	Spinney, The	L
36	Sutton Ecology Centre	BI
37	Sutton to St Helier Railway Line	BII
38	Therapia Lane Rough	M
39	Water Gardens Bank	BII
40	Woodcote Grove Wood	BII
41	Woodcote Park Golf Course	M
42	Worcester Park Sewage Works	BII

M	Sites of Metropolitan Importance
BI	Sites of Borough Importance, Grade I
BII	Sites of Borough Importance, Grade II
L	Sites of Local Importance

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The Habitat Action Plans

Woodlands & Scrub

Wild Service tree © Mike Waite

"Of all the trees that grow so fair,
Old England to adorn
Greater are none beneath the Sun
Than Oak, and Ash, and Thorn"

(A Tree Song – Rudyard Kipling)

1. Aim

- To maintain and improve the current area of semi-natural woodland, scrub, orchards and trees which are of landscape, wildlife and historic interest
- To promote the importance of these habitats for biodiversity in the Borough

2. Introduction

Our association with woodlands began with the primeval wildwood that covered most of lowland Britain following the last Ice Age. Few fail to be inspired by the splendour of ancient woodland, indeed, without the influence of our human ancestors London would today be swathed in extensive forest. However, only remnants of this ancient woodland (meaning having been in existence since 1600 A.D.) remain today. Nevertheless, many people enjoy and value access to all types of woodland. Woodland with a good age structure of young to ancient trees can provide habitat for a huge array of organisms. However, the majority of woodland in Sutton is semi-natural, often

re-established after clearances, or derived from plantations. Even so, this habitat has the potential for a rich assemblage of species.

3. Current Status

3.1 Area & Distribution

In comparison with other European Countries, Britain has one of the lowest land areas covered by woodland, with all types of woodland contributing to 7% of the land surface. Perhaps more importantly, in ecological terms, ancient semi-natural broad-leaved and yew woodland covers only 1% of the land surface.

Woodland is a plant community dominated by trees and shrubs. The UK Woodland Assurance scheme definition of small woodland is an area 'up to 100 hectares (250 acres)'. However, it is accepted that woodlands can be considerably smaller; for example Little Woodcote Wood in Sutton is only 1.9 ha. Scrub includes all stages from scattered bushes to closed canopy vegetation. Scrub is dominated by locally native or non-native shrubs and tree saplings, usually less than 5m tall, occasionally with a few scattered trees. It is the dominance of woody species that distinguishes woodland and scrub from grasslands and other communities. Within this general classification, woodland is sub-divided into a wide range of community types, including semi-natural broadleaved native woodland, non-native broadleaved woodland, coniferous, carr and scrub. Within Sutton, woodland and scrub communities are defined as 'semi-natural', as they all will have had management in the past. Woodlands and scrub occur on all soils found in the Borough; a characteristic woodland community type grows depending on factors such as soil type, slope, aspect, climate and past management.

Of Sutton's woodland resource, the largest block is Ruffett and Big Wood, comprising 7 ha in total. The only likely ancient woodland present in the Borough is a strip at the western end of Roundshaw Downs Local Nature Reserve. Typical indicator species of ancient woodland can be found here, including wood sedge *Carex sylvatica*, moschatel *Adoxa moschatellina* and goldilocks buttercup *Ranunculus auricomus*. Most of Sutton's woodland is undoubtedly secondary, the result of 18th and 19th century plantations, or natural colonisation of unmanaged land. Significant areas of secondary woodland exist at Oaks Park, with smaller plantations at Little Woodcote Wood, Wellfield Plantation, and the adjacent former Queen Mary's Hospital site. These sites contain a mixture of both native and non-native tree species.

In the north, Sutton's woodlands comprise dominant canopy species of oak, ash and sycamore, with occasional horse chestnut on London clay and soils derived from river terrace gravels. Common understorey species include hawthorn and field maple.

In the south, canopy species of oak, ash, sycamore and beech dominate, with occasional horse

chestnut. Chalk scrub has developed at sites such as Woodcote Park, Cuddington Golf Course, Roundshaw Downs and Carshalton Road Pastures. This community type is often underestimated as it forms a valuable habitat for birds and invertebrates. In Sutton, chalk scrub consists of predominantly hawthorn, but has components of buckthorn, dogwood, spindle, wayfaring tree, privet and blackthorn.

Scrubland also dominates railway line sites. Willow species and alder are present along the river corridor.

Sutton is one of the least wooded of the London Boroughs, with only an estimated 2.4% cover of the land surface. However, by way of contrast, in relation to other London Boroughs, Sutton contains large numbers of street and garden trees: 186,140 with a high density of 42.86/ ha (London Tree Survey 1993), compared to other London boroughs. Where woodland is present, it exists as small discreet blocks with low connectivity. This is a product of clearance of forest in medieval times for pasture in the south of the Borough, and for arable crops and parklands in the north.

3.2 Trends

Without the historical clearance by humans, the climax vegetation of London would be woodland. The removal of native woodlands has resulted in small (less than 20 ha), widely scattered parcels of secondary woodland within Sutton.

Historical management techniques, such as coppicing have established a 'selected for' community in secondary woodland such as ash, field maple, hornbeam, beech, sweet chestnut and hazel over oak, birch, elm, rowan, holly and sycamore. Where more recent secondary woodlands have established a more natural canopy may develop than those associated with this traditional management practice. That said the recent revitalisation of these techniques is recognised as providing ideal habitat opportunities for a number of rare and declining woodland species.

In practice, the current pattern is to diversify woodland, to establish a naturalistic planting scheme using native species, and not to imitate a particular natural community type.

Recent natural processes, such as the great storms of 1987, have had a profound effect on the landscape. The storm caused the loss of thousands of trees in woodland areas, such as Oaks Park in the south of the Borough.

Most of the extant secondary woodland is botanically poor. The absence of significant grazing and browsing by herbivores, has favoured species such as holly and ivy. The undergrowth in some woodland is being smothered by aggressive invasive species, such as snowberry *Symphoricarpos albus* at the Spinney and Roundshaw Woods, shading out the native flora. Woodlands are ever popular for playing, walking and educational purposes. However, their overuse, particularly in heavily populated urban areas results in soil compaction and vandalism, even the perception that they are unsafe, has led to the

clearance of shrub vegetation to improve sightlines. The overall effect of human land use is to produce an impoverished ground flora, and lack of canopy regeneration.

Nevertheless, demand for community woodlands remains high. The cultural perception of high wildlife value of woodlands means that they are held in high regard. This is apparent when tree felling or clearance takes place, as this generates significant public interest, even when the overall aim is sympathetic conservation management.

Through the process of succession, trees regenerate on wasteland, and along corridors such as railways, rivers etc., and creating new secondary woodlands. There is increasing acceptance among the public of the value of deadwood habitats, and their associated species.

Climate change is likely to cause a further shift in species composition, as factors such as decrease in rainfall, increase in average temperatures, and greater extremes of temperature favour certain tree species over others.

4. Specific Factors Affecting the Habitat

- Selling off woodland for development
- Increased fragmentation of woodland
- Inappropriate management or neglect
- Reinstatement of traditional management techniques where appropriate (e.g. coppicing)
- Successional processes
- Invasion of aggressive non-native species
- Recreational overuse, dumping and vandalism
- Establishing woodland on other valuable habitat (e.g. chalk grassland)
- Desire for new planting
- Loss of deadwood habitats, and conversely creation of new deadwood habitats
- Health and safety requirements of unsafe trees
- Lack of money, resources to manage woodlands
- Opportunities for complimentary recreational use
- Climate change
- Pollution

5. Current Action

5.1 Legal Status

There are numerous woodland habitat action plans, statements and many species action plans relevant to woodland. A statutory woodland local nature reserve, owned by the Woodland Trust, has been designated at Ruffett and Big Wood. There are a number of local nature reserves, and Sites of Importance for Nature Conservation (SINCs) designated within Sutton, that have woodland or scrub component. Protection also comes in the form of planning policies in the Local Development Framework (LDF). The LDF sets

out detailed policies to guide development in a local authority area. Many trees and hedgerows are protected by Tree Preservation Orders and within Conservation Areas. Protected species associated with woodlands include the stag beetle, particularly deadwood habitats, badger and bats (all species), the fact that considerable numbers of breeding birds use trees to nest in effectively means that those trees are essentially protected from felling from March until the end of August.

5.2 Mechanisms targeting the habitat

Creation, enhancement, and maintenance of woodland habitats is central to a number of strategies; including the UK Sustainable Development Strategy, England Forestry Strategy, The England Biodiversity Strategy, and the Sustainable Communities Plan encouraging the role of Community Forests.

Over the next 20 years, the Mayor of London, the Greater London Authority, and the Forestry Commission are committed to maintaining and enhancing London's trees and woodlands. This will be achieved through the London Tree & Woodland Framework, to meet the goal of no overall loss of habitat for wildlife, and access to quality 'natural' space. The Framework provides guidance on the right place for the right tree, to help ensure that London remains green in the face of pressure from a growing population and economy. The GLA is leading on the future development and implementation of London Woodland, Orchards and Veteran Trees Action Plan.

Within the Borough practical management is carried out at a number of sites, such as Ruffett and Big Wood by the Woodland Trust, and by the Sutton Nature Conservation Volunteers (SNCV), in partnership with Sutton Council. Until recently the SNCV managed a Surrey County Council owned site at Little Woodcote Wood. It is hoped that this can be returned to favourable management in the future.

6. Flagship Species

Common Name	Latin	Brief Description
Spindle	*Euonymous europaeus*	Common on chalky soils. Bright green twigs and small flowers in summer give way to vivid pink fruits that, in turn, split to reveal an orange seed.
Speckled wood butterfly	*Pararge aegeria*	Attractive brown butterfly with cream coloured spots and a

		small dark eye-spot near the tip of the upper wing. Commonly seen in areas where the sunlight breaks through the trees.
Stag beetle	*Lucanus cervus*	An enigmatic giant of the insect world. The larvae live in dead and decaying wood for up to 7 years. Sutton is a hotspot for this declining species.
Great spotted woodpecker	*Dendrocopos major*	Familiar woodpecker, often heard searching for larvae and wood-boring insects in woodland using its characteristic drumming technique.

7. Objectives and Actions

Vision Statement:

There are 13 woodland SINCs in Sutton. 2 woodlands have been declared Local Nature Reserves. In addition, 435 individual trees are protected by Tree Protection Orders.

This action plan aims

- to maintain and improve the current area of semi-natural woodland, scrub, orchards and trees which are of landscape, wildlife and historic interest
- to promote the importance of these habitats for biodiversity in the Borough

Targets:

WS1	To maintain the current extent of woodland and scrub in LB Sutton. Baseline 82ha (GIGL data 2006)
WS2	To protect and maintain veteran trees. Baseline 2009: 435 TPOs
WS3	To improve the condition of woodlands, hedgerows and scrub. Ensure all woodland SINCs and local nature reserves are

managed for nature conservation. Target: 13 SINCs (82 ha) by 2015

WS4 To create woodland, scrub and orchard habitats on identified opportunity sites. Target: 0.1ha orchard habitats by 2015

Actions:

WS 1.01 Ensure LDF has relevant policies to create wildlife areas within developments. Ongoing. Lead contact: Biodiversity Manager

WS 1.02 Ensure important areas of woodland are protected under Tree Protection Orders or conservation designations by 2015. Lead contact: Biodiversity Manager

WS 1.03 Carry out NVC survey in existing woodland to establish ancient woodland or semi-natural status by 2015. Input all available flora and fauna on to RECORDER database & share with GIGL. Lead contact: Biodiversity Manager

WS 2.01 Identify resources to map veteran trees within the Borough by 2012. Lead contact: Biodiversity Manager

WS 2.02 Protect veteran trees through the planning process. Ongoing. Lead contact: Biodiversity Manager

WS 3.01 Bring woodland habitat into Woodland Grant Scheme by 2012. Goal: 54 ha. Lead contact: Parks Manager

WS 3.02 Improve woodlands in Beddington Park and Roundshaw Woods through external funding schemes by 2015. Goal: 3ha of woodland improved. Lead contact: Biodiversity Manager

WS 3.03 Promote the value of woodlands & scrub through talks, guided walks and events. Encourage local community groups to become more involved in the management of their local woodland & scrub. Goal: 100 people by 2015. Lead contact: Biodiversity Manager

WS 3.04 Identify resources to carry out woodland management in the Spinney by 2015. Goal: 0.3ha. Lead contact: Biodiversity Manager

WS 4.01 Encourage creation of hedgerow features, orchards and tree planting in new developments, especially in identified opportunity areas. Ongoing. Lead contact: Biodiversity Manager

WS 4.02 Ensure Council Development Control Officers are appropriately trained to safeguard and enhance biodiversity. Provide updated information annually to enable the Council to fulfil its Biodiversity duty and encourage the creation of wildlife areas in developments, e.g. scrub/ orchard areas in new developments. Ongoing. Lead contact: Biodiversity Manager

WS 4.03 Participate in the London Orchard Project. Ongoing. Lead contact: Biodiversity Manager

WS 4.04 Develop an orchard at Devonshire Avenue LNR by 2013. Goal: 0.04ha. Lead contact: Biodiversity Manager

WS 4.05 Develop an orchard at Old Lodge Farm by 2012. Goal: 0.1 ha Lead Partner: DCMP

Relevant Action Plans

Local Plans
Parks & Open Spaces, Chalk Grasslands, Bats.

London Plans
London Tree and Woodland Framework, Chalk Grassland, Churchyards and Cemeteries, Bats, Stag Beetle, Black Poplar, Mistletoe, Railway Linesides Audit; Open Landscapes with Ancient/Old Trees Audit.

National Plans
Lowland beech and yew woodland, Lowland wood-pasture and parkland, Wet woodland, song thrush *Turdus philomelos*, stag beetle *Lucanus cervus*.

Key References

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Rackham, O. (1980) *Ancient Woodland – its history, vegetation and uses in England*, Edward Arnold

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Websites: JNCC, The Woodland Trust, English Nature, Forestry Commission, UK BAP, London Wildlife Trust, DEFRA, London Biodiversity Partnership

Abbreviations

DEFRA – Department of Environment, Food and Rural Affairs

FC – Forestry Commission

GIGL – Greenspace Information for Greater London

GLA – Greater London Authority

LBS – London Borough of Sutton

LDF – Local Development Framework

SNCV – Sutton Nature Conservation Volunteers

UDP – Unitary Development Plan

TPO – Tree Preservation Order

WT – Woodland Trust

LWT – London Wildlife Trust

SINC – Site of Importance for Nature Conservation

Contact

The lead for this Habitat Action Plan is the London Borough of Sutton

Hendryk Jurk
Biodiversity Manager
London Borough of Sutton
24 Denmark Road
Carshalton
Surrey SM5 2JG
Tel: (020) 8770 5000
Email: biodiversity@sutton.gov.uk

Parks & Open Spaces

"Most cherished in this mundane world is a place without traffic;
Truly in the midst of the city there can be mountain and forest."
-Wen Zhengming (1470-1559)

1. Aim

- To diversify and increase the extent of wildlife habitats within Parks and Open Spaces,
- To implement good conservation practice to enhance parks and green spaces for nature, and
- To raise awareness of the importance of parks and open spaces in the conservation of Sutton's biodiversity.

2. Introduction

Most parkland has gone through a series of transformations over many centuries to establish what we understand as a park today. In general, parkland is perceived as wide-open spaces with scattered trees, either singly or in blocks, typified by the 18th century English landscape park. However, urban parkland may be much smaller scale, and can include open access gardens and churchyards with formally planted areas. Churchyards are a relatively minor resource in terms of land cover and yet make a significant contribution to overall biodiversity by providing examples of relic semi-natural habitats such as chalk grassland, act as links in green chains, and provide relatively undisturbed areas for wildlife.

Outside of formal gardens these places are often where we have our first-hand experiences of 'nature'. Parks offer a wide range of breeding, foraging and refuge opportunities for wildlife, and they can provide suitable links between existing wildlife sites. Today, the aim of parks is to deliver a recreational, social and environmental role. In seeking to achieve this

balance, many areas are set aside or managed sympathetically to establish wildlife-friendly areas within parks.

3. Current Status

3.1 Area & Distribution

In 1992 the London Ecology Unit audited parkland and found that it comprises 12,500 ha or 8% of London's total land area.

Within the Borough there are 61 parks and 25 open access gardens covering some 600 ha. 4 churchyards are designated Sites of Importance for Nature Conservation covering a total of 4.7 ha. A number of Sutton's parks have strong ecological components, such as the Oaks Park nature trail and chalk grassland meadow. Beddington Park has a chalk river running through it, as well as little disturbed wetland and woodland features, which provide ideal wildlife habitat. Parkland and open space is present throughout the Borough, although they range in physical and social quality and accessibility. A recent audit and assessment rated the habitat component for nature of Sutton's parks and open spaces in a wide range of good to poor status. However, it should be acknowledged that audits or surveys need to include both habitat and species e.g. birds and butterflies; without this the true contribution of 'ordinary parks' can easily be missed - e.g. as habitat for song thrush, robin etc. Certainly areas of natural habitats are best, but it is important not to ignore the rest!

3.2 Trends

Much of Sutton's parkland was formally part of estates, traditionally managed for deer or other grazing, such as Beddington Park and the Oaks Park. Typical town parks exist today composed mainly of short-mown grass and ornamental trees with flowerbeds, such as the Grove Park and Manor Park. This is a legacy of the last period of large-scale park creation at the end of the 19th century. This period was also heralded as the heyday of public parkland planting.

A movement away from these high maintenance landscapes over the last 20 years has created opportunities for wildlife in parklands, as management input for nature conservation is relatively low, and maintenance costs are perceived as low. This situation often creates areas within parkland that are sustainable, with varied plant communities, and supporting a large amount of wildlife.

A trend towards the planting of native species to achieve ecological improvement has been developing in recent years.

Current thinking fundamentally offers three approaches to parkland management for the benefit of wildlife. These are:

i) Habitat Restoration; trying to re-establish what species might have occupied the site in the past

ii) Creative Conservation; creates new wildlife landscapes using

native species that are suited to the environmental conditions that exist on the site; and

iii) Naturalistic vegetation; in essence attempts to replicate the structure of natural plant communities, but does not have to use exclusively native species.

Today, the vegetation of many formal parks is comprised mostly of non-native species and species poor grassland, large areas of amenity grassland and often neglected areas of ruderal -'weed' species. Formal landscaping areas can have wildlife value, these are areas where the flora may be almost entirely non-native, but the habitat is still valuable for birds, bats, butterflies etc. For example the birds that use ornamental shrubberies will be mainly woodland species, whereas seed-eating open country species e.g. goldfinch *Carduelis carduelis*, will make more use of meadows.

However, parks and open spaces often contain relic habitats, from pre-suburban landscapes such as veteran trees, copses, hedgerows and specialised plants that survive in less intensively managed areas. This is especially true for churchyards that have a history of low intensity management.

Within Sutton 5 closed churchyards are managed by the local authority under church ownership. They offer potential opportunities for sympathetic management for nature conservation.

Typical bird species of formal parks include blue tit *Parus caeruleus*, great tit *Parus major*, song thrush *Turdus philomelos*, blackbird *Turdus merula* and robin *Erithacus rubecula*. Older trees provide breeding and feeding habitat for lesser and great spotted woodpecker. Butterflies such as holly blue *Celastrina argiolus* and peacock *Inachis io* are often present and, within wooded habitat, speckled wood butterflies *Pararge aegeria* are increasingly common. Where there are lakes moorhen *Gallinula chloropus* and grey heron *Ardea cinerea* may be found, as well as dragonflies such as southern hawker *Aeshna cyanea*, brown hawker *Aeshna grandis* and blue-tailed damselfly *Ischnura elegans*, where there are some areas of marginal vegetation.

Woodland rides and edges provide important feeding habitat for bats, and are particularly important for the Serotine bat *Eptesicus serotinus* in Sutton.

4. Specific Factors Affecting the Habitat

- Negative public response of disorderly appearance of nature areas
- Damaging pesticide & herbicide usage
- Vandalism, illegal dumping & litter
- Conflicting recreational & social pressures
- Increasing recognition of biodiversity value of parks
- History of low intensity management in churchyards
- Loss of deadwood habitats, and conversely creation of new deadwood habitats.
- Health & safety requirements of unsafe trees

- Financial constraints on parks management
- Voluntary sector involvement
- Inappropriate management or neglect
- Invasion of aggressive non-native species
- Disturbance to wildlife by dogs & enrichment by their faeces
- Skills of contract staff - often linked to constraints of contract specification

5. Current Action

5.1 Legal Status

Many parks are SINCs; some have listed historic park protection, or Metropolitan Open Land and Greenbelt designation. They are thus protected by planning designations and policies contained in the LDF. Certain trees and hedgerows within parks are protected by Tree Preservation Orders. Protected species found within parks include the stag beetle (deadwood habitats) and bats (all species).

Although it does not confer legal status, wood pasture and parkland are a priority habitat under the UK Biodiversity Habitat Action Plan. This ensures that conservation of this habitat type is encouraged through national and local policy and action.

5.2 Mechanisms targeting the habitat

Sutton Council's Parks Department maintains many semi-natural areas for nature conservation within parks, such as the chalk grassland meadow at Oaks Park. Many 'Friends of' groups actively manage, and lobby for, wildlife areas in their parks.

Deadwood habitats are now left to decay in many parks, where this does not conflict with health and safety requirements.

The Council takes part in the London wide house sparrow project that created different meadow areas in parks to provide feeding areas for this declining species. In parks throughout the Borough regular bat walks are undertaken by London Wildlife Trust members, and Sutton Council staff.

Natural plant communities probably survive within urban parks in Sutton to a greater extent than in boroughs in central London. These are obviously a priority for protection. In some cases this interest may be latent e.g. where wild flowers get mown before they have a chance to flower. This has been demonstrated by leaving a wildflower meadow to regenerate on former amenity grassland at Oaks Park.

It is not necessary to go all the way from amenity grass to meadow to improve wildlife value; some intermediate regimes can have good value e.g. flowery lawns (left for six weeks in late spring/early summer so low growing plants can flower).

However, large areas of grassland within parks are cut for amenity use with little consideration for biodiversity. These areas are maintained using public money and under often intense public scrutiny. If they are left to revert to their relic habitats there is the perception that

they are unmanaged and of less value.

Butterflies may move between wild and formal areas e.g. meadow brown feeding on lavender. Creating meadow areas can therefore enhance the biodiversity contribution of ornamental areas. A holistic approach is therefore preferred, rather than seeing biodiversity as a function only in ‘wildlife areas’.

Future benefits for biodiversity in parks require an integrated approach to management, balancing natural or naturalistic plant communities with areas of more formal landscaping, whilst also catering for recreational and social requirements. It is important to recognise the contribution of formal areas (particularly for birds), and look for ways to maximise this value that are compatible with their primary role.

6. Flagship Species

Common Name	Latin	Brief Description
Veteran trees		Sweet chestnut in Carshalton Park, Hornbeams at Cuddington Rec. London Plane at the Ecology Centre.
Stag beetle	*Lucanus cervus*	An enigmatic giant of the insect world. The larvae live in dead and decaying wood for up to 7 years. Sutton is a hotspot for this declining species.
Hedgehog	*Erinaceus europaeus*	Found in parks where woodland edges, hedgerows and suburban habitats provide plenty of food, but thought to be declining.
Serotine bat	*Eptesicus serotinus*	Serotines are recorded in Sutton's Parks, although they are thought to be declining.
Wall ferns	*Aspleniaceae*	Old buildings and walls support these plants growing in crevices and joints between the stones.
Lichens	for example *Caloplaca decipiens*	Lichens are a combination of two organisms, a fungus and an alga, living together. Churches and Churchyards are important for lichen conservation, particularly where there are no natural exposed rock surfaces.

7. Objectives and Actions

Vision Statement:

Sutton has 61 Parks and 25 Open Access Gardens, a total of 600 ha and 14 % of the Boroughs land area. 9 have been designated as Sites of Importance for Nature Conservation.

Sutton's cemeteries and churchyards play an important role providing habitat for bats and birds.

The aim of this action plan is

- To diversify and increase the extent of wildlife habitats within Parks and Open Spaces,
- To implement good conservation practice to enhance parks and green spaces for nature, and
- To raise awareness of the importance of parks and open spaces in the conservation of Sutton's biodiversity.

Targets:

POS1	To ensure all important areas for biodiversity in Parks an Open Spaces are managed for nature conservation.
POS2	To promote the importance of Parks and Open Spaces for biodiversity in the Borough
POS3	To enhance and diversify the wildlife habitat in Parks and Open Spaces in line with their SINC designations, including Cemeteries and Churchyards. Target: 2 Churchyards, 9 Parks by 2015
POS4	To create new areas of wildlife habitat within Parks and Open Spaces. Goal: Improve 3 areas for biodiversity by 2015.

Actions:

POS1.01	Ensure the Local Development Framework has relevant policies to protect parks and open spaces for biodiversity, including churchyards & cemeteries. Ongoing. Lead contact: Biodiversity Manager
POS1.02	Designate 3 new Sites of Importance for Nature Conservation within the site development policies. Carshalton Park, Queen

Mary's Park and Cheam Park Goal: 19ha. Lead contact: Biodiversity Manager

POS1.03 Undertake habitat surveys of all parks/areas within parks managed for nature conservation by 2015. Input all available flora and fauna on to RECORDER database & share with GIGL. Goal: 9 sites. Lead contact: Biodiversity Manager

POS1.04 Identify & survey churchyards & cemeteries with existing or potential biodiversity value by 2013. Input all available flora and fauna on to RECORDER database. Lead contact: Biodiversity Manager

POS 1.05 Identify social landlords that manage open spaces with potential for biodiversity improvements by 2013. Lead contact: Biodiversity Manager

POS2.01 Promote the value of parks for wildlife through talks, guided walks, conservation task days and events, and encourage the local community to become more involved in the management of their local park. Increase awareness of the role played by cemeteries and churchyards in supporting wildlife.

Goals: 20 events, 200 children and 100 adult members of the public. Lead contact: Biodiversity Manager

POS 2.02 Raise awareness of the broader ecological function of parks, how parks can be improved for the benefit of nature and city dwellers by providing talks to 10 'Friends of' parks groups by 2015. Lead contact: Biodiversity Manager

POS 2.03 Identify funding opportunities to install interpretation panels in parks and open spaces to promote importance of wildlife habitats. Goal: 5 Interpretation Panels by 2015. Lead contact: Biodiversity Manager

POS 3.01 Implement sustainable practice in day to day maintenance of parks & open spaces. Ongoing. Lead contact: Parks Manager

POS 3.02 Include biodiversity and sustainable practice in all parks management plans that cover Sites of Importance for nature conservation by 2015. Goal: 9 parks by 2015. Lead contact: Parks Manager

POS 3.03 Identify funding opportunities to improve woodland area in Beddington Park. Link to WS 3.02 Lead contact: Parks Manager

POS 4.01 Identify parks or open spaces for enhancement and creation by 2013. Give priority to areas within or near mapped Areas of

Deficiency in access to nature in Sutton and areas within the proposed Wandle Valley Regional Park. Lead contact: Biodiversity Manager

POS 4.02 Establish new area of lowland wet meadow at Sutton Common Paddock by 2013. Goal: 1.6ha Lead contact: Biodiversity Manager

POS 4.03 Maintain participation in House Sparrow Project. Ongoing. Lead contact: Biodiversity Manager

POS 4.04 Participate in the tree sparrow project to enhance areas in the vicinity of Beddington Farmlands and along the Wandle for tree sparrows. Lead contact: Biodiversity Manager

POS 4.05 Identify opportunities to create suitable areas for environmental Education by 2011. Lead contact: Biodiversity Manager

POS 4.06 Plant at least 80 trees annually in open spaces. Ongoing. Lead contact: Parks Manager

Relevant Action Plans

Local Plans
Woodland and scrub; chalk grassland; rivers and wetlands; bats.

London Plans
Woodland; Open Landscapes with Ancient/Old Trees; Chalk grassland; Grassland, Meadows and Pasture; Ponds, Lakes and reservoirs; churchyards and cemeteries; rivers and streams; Parks, amenity grasslands and city squares habitat statement; London Tree and Woodland Framework

National Plans
Lowland beech and yew woodland; Lowland wood-pasture and parkland; Wet woodland; Lowland calcareous grassland; Chalk rivers; pipistrelle bat *Pipistrellus pipistrellus*; stag beetle *Lucanus cervus*

Key References

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Mayor of London (2002) Connecting with London's nature. *The Mayor's Biodiversity Strategy.* Greater London Authority

Scott Wilson Business Consultancy (2005) *Sutton Open Space Strategy, Draft Report v.1 for London Borough of Sutton*

Abbreviations

GIGL – Greenspace Information for Greater London

GLA – Greater London Authority

LBS – London Borough of Sutton

LDF – Local Development Framework

LWT – London Wildlife Trust

OSS – Open Spaces Strategy

SINC – Site of Importance for Nature Conservation

UDP – Unitary Development Plan

Working Group – a consortium of 'Friends of' groups

Contact

The lead for this Habitat Action Plan is the London Borough of Sutton

Hendryk Jurk
Biodiversity Manager
London Borough of Sutton
24 Denmark Road
Carshalton
Surrey SM5 2JG
Tel: (020) 8770 5000
Email: biodiversity@sutton.gov.uk

Chalk Grasslands

Sheep grazing © Downlands Countryside Management Project

"Because half a dozen grasshoppers under a fern make the field ring with their importunate chink …... do not imagine that those who make the noise are the only inhabitants of the field"

(Edmund Burke)

1. Aim

- To improve the condition of the Boroughs Chalk grassland through appropriate management,
- To identify opportunities to extend this habitat and
- To increase awareness of the role calcareous grassland plays in supporting wildlife.

2. Introduction

Chalk grasslands are important for biodiversity. Sutton contains some of the best examples of chalk grassland habitats in London. These nutrient poor grasslands are rare and threatened in the UK and in London in particular. Chalk or calcareous grassland (meaning plants that thrive on lime-rich soils), is primarily the product of the practice of farming using grazing animals, that began in pre-historic times. Although chalk grassland would have existed naturally in openings and glades, much of its expansion is due to the human clearance of scrub and trees and subsequent livestock grazing. Today, within urban areas, it is more likely to be the sensitive mowing and removal of cuttings, rather than grazing by herbivores that maintain the grassy swards, although grazing remains the best means of management, as it removes vegetation gradually, giving invertebrates a chance to survive, and produces a better sward structure than cutting.

Ultimately, the response of plants to soil, slope, aspect, climate and management history produces an often rich and delightful assemblage of plants, and an important habitat for invertebrates. These flower rich grasslands evoke in us a sense of our rural past, are valued for their beauty, and have attracted a long and abiding fascination from ecologists and amateur naturalists alike.

3. Current Status

3.1 Area & Distribution

Sutton supports approximately 170 ha of chalk grassland, including golf courses. In the London context Sutton contains 12 % of the London resource. Within the UK, chalk grassland is estimated to cover 40 – 50,000 ha of the land surface. In London, natural chalk grassland is restricted to the southern edge, across the Boroughs of Sutton, Croydon and Bromley on the North Downs, and to the extreme northwest, in the Borough of Hillingdon, where outliers of the Chiltern Hills just reach the capital. Within Sutton the underlying geology is chalk, along an east-west line that roughly divides the borough in half. The majority of existing chalk grassland meadows of current ecological value is restricted to 2 large sites, at the Oaks Park and Roundshaw Downs. Many of the other sites are of limited size, fragmented and isolated such as The Warren, Devonshire Avenue Local Nature Reserve and the Royal Marsden hospital grassland. A considerable proportion of the surviving chalk grassland resource is turned over to golf courses. Most of the Sutton sites also have considerable recreation and amenity use.

Sutton's chalk grasslands support a number of rare species including the nationally rare and protected greater yellow rattle *Rhinanthus angustifolius*, and nationally scarce species such as knapweed broomrape *Orobanche elatior*, and man orchid *Aceras anthropophorum*. Characteristic flowers such as kidney-vetch *Anthyllis vulneraria*, marjoram *Origanum vulgare*, and greater knapweed *Centaurea scabiosa* enrich the grass sward. Key animals include the nationally scarce small blue butterfly *Cupido minimus* (BAP Species of Conservation Concern) and birds such as the skylark Alauda arvensis 'Red List' species of 'Birds of Conservation Concern' and BAP Priority Species).

In the southern half of the Borough shallow lime-rich soils have developed overlying the chalk. All soils are nutrient poor and basic within the pH range of 6.5 and 8.5.

3.2 Trends

Current estimates indicate that chalk grassland has suffered dramatic declines nationally. This is a product of a combination of factors such as 'agricultural improvement', by the addition of fertiliser or re-seeding with high yield pasture grasses as animal feed. The national decline of grazing, and the decreased influence of rabbits due to myxomatosis in the mid-1950s, led to the invasion of chalk grassland by scrub and trees through the process of natural succession. More recently, lack of manpower and financial resources for management of these sites, for their nature conservation value, has led to a gradual decline in quality. Continued, regular management is necessary to halt successional change.

Recently, conservation management practice on chalk grassland seeks to achieve structural diversity to encourage biodiversity. For example short,

sparse chalk grassland, or even bare ground where temperatures are higher than in other habitats, is important for invertebrates, some of which are nationally scarce, and enables seeding in of annual plants. Although succession to scrub and woodland is a threat, chalk scrub of varied age and species is important in itself, because of the invertebrates it supports, and the shelter it provides. Because Sutton sites are small, however, scrub on them is best confined to hedges and boundaries, rather than scattered across open grassland.

Significantly, re-establishing chalk grassland is currently popular, and a number of grant aided schemes are available to achieve this, such as Natural England's environmental stewardship schemes.

4. Specific Factors Affecting the Habitat

- Cessation of traditional agricultural practices leading to encroachment by scrub and trees
- Frequent mowing
- Pressure for development
- Fragmentation and isolation
- Inappropriate pesticide use, application of fertiliser, tree planting, re-seeding
- Increasing recreational pressure, signs of trampling, disturbance, nutrient enrichment from dog faeces.
- Pollution and climate change
- Genetic variation of 'non-native' see Flora locale
- Increasing management costs of current reserve
- Invasive non-native species, especially cotoneaster *Cotoneaster spp.* and golden rod *Solidago canadensis*.

5. Current Action

5.1 Legal Status

Significant areas of chalk grassland are under Council ownership. Four chalk grassland sites have been declared as local nature reserves, and are managed for nature conservation.

Sutton has a number of chalk grassland sites, or sites with a proportion of chalk grassland. There are 8 sites in the Borough managed by the Council for their chalk grassland communities covering an area of approximately 52 ha. Chalk Grassland sites were graded based on criteria outlined in Ecology Handbook 3 *Nature Conservation Guidelines for London* (Greater London Council 1985), as subsequently revised in the report Sites of Metropolitan Importance for Nature Conservation (London Ecology Unit 1989). Two sites, Roundshaw Downs and Woodcote Park Golf Course are designated as Sites of Metropolitan Importance i.e. those which contain the best examples of London's chalk habitats, sites which contain rare species, rare assemblages of species, important populations of species, or which are of particular importance within large areas of otherwise heavily built up London. Sites of Borough Importance Grade I with a component of chalk grassland are Carshalton Road Pastures, The Oaks Park and Golf Course, Cuddington Golf Course and

Cuddington Hospital. A number of other sites are SINCs and have some protection under the Local Development Framework.

Two chalk grassland specialists are specially protected under the Wildlife and Countryside Act 1981. These are the greater yellow-rattle flowering plant and the small blue butterfly. The greater yellow-rattle is a nationally rare (Red Data Book) plant given special protection against picking, uprooting, destruction and sale. The small blue butterfly is protected only from trade.

5.2 Mechanisms targeting the habitat

The London Borough of Sutton, in partnership with organisations such as the DCMP and SNCV, currently manages eight of Sutton's chalk grassland sites. The traditional method of grazing with livestock, for the benefit of nature conservation, occurs on two sites within the Borough, at Cuddington Meadows and Wellfield Grassland. Elsewhere, management involves a combination of cutting and removal of woody shrubs and invasive species, mowing and most importantly removal of cut material, to maintain the low nutrient status. Where these practices have ceased on chalk grassland, there has been a shift from grassland to scrub. Previous work to reverse the decline and improve the quality of chalk grassland, has taken place at Carshalton Road Pastures, Roundshaw Downs and The Oaks Park. These sites show unquestionably the results of selective conservation management for chalk grassland, and it is hoped that such management can be extended in the future. Regular condition assessments have been carried out since 2007 showing that the chalk grassland habitat is improving on managed sites.

Section 106 agreements have provided financial support, in terms of revenue and capital for works, to benefit nature conservation at a number of chalk grassland sites.

6. Flagship Species

Common Name	Latin	Brief Description
Marjoram	*Origanum vulgare*	Widespread on chalk soils, this aromatic herb was recommended by Culpepper as a cure for a great number of ills.
Pyramidal orchid	*Anacamptis pyramidalis*	A frequently encountered species of limestone grasslands such as Woodcote Park Golf Course and Wellfield Grassland
Quaking grass	*Briza media*	'Tottering grass' is a delicate and distinctive plant most commonly found on chalk grassland.
Marbled white	*Melanargia galathea*	One of the most easily identified and attractive butterflies, often seen in large numbers in high summer.
Common blue butterfly	*Polyommatus icarus*	Chalk grassland is an important habitat for this butterfly.
Small blue butterfly	*Cupido minimus*	Kidney vetch, a rare plant, is the only larval foodplant of this nationally rare and declining butterfly found on chalk grassland.
Skylark	*Alauda arvensis*	A species in rapid decline nationally. It is generally found in open grassland habitats.

7. Objectives and Actions

Sutton has approximately 52ha of calcareous grassland sites that are managed for nature conservation. This represents approximately 15% of London's Chalk Grassland resource. Further opportunities exist to extend the habitat, especially within the Boroughs Golf Courses. This action plan aims

- to improve the condition of the Boroughs Chalk grassland through appropriate management,
- to identify opportunities to extend this habitat and
- to increase awareness of the role calcareous grassland plays in supporting wildlife.

Targets:

CG1 To maintain the current extent chalk grassland in LB Sutton. Baseline 2009: 170 ha GIGL data, including golf courses.

CG2 To promote the importance of chalk grasslands for biodiversity in the Borough

CG3 To enhance the quality of calcareous grassland areas by appropriate management and use. Target: 50ha

CG4 To create chalk grassland habitats. Goal: Identify resources and areas to establish 1.5 ha by 2015.

Actions:

CG 1.01 Protect important chalk grassland through the planning process. Ongoing. Lead contact: Biodiversity Manager

CG 1.02 Carry out NVC habitat surveys on chalk grassland SINCs and proposed SINCs by 2015. Record all data on recorder and share with GIGL. Goal: 10 sites; Lead contact: Biodiversity Manager

CG 2.01 Encourage local community groups to become more involved in the management of their local chalk grassland by running conservation grazing events and giving talks and workshops to Friends of Groups and general public. Encourage the creation of chalk grassland wildlife gardens. Goal: 10 events by 2015. Lead contact: Biodiversity Manager

CG 2.02 Develop and run A-level and GCSE education sessions on chalk grassland. Goal: 3 secondary schools using chalk grassland sites for sessions by 2011. Lead contact: Biodiversity Manager

CG 3.01 Establish 2 new areas for conservation grazing by 2015 at Wellfield South and Roundshaw Downs. Target: 4.5ha Lead contact: Biodiversity Manager; Additional contact: DCMP

CG 3.02 Participate in London Grazing Animals Project. Ongoing. Lead contact: Biodiversity Manager

CG 3.03 Manage existing habitat for nature conservation. Within management plans identify specialist management requirements for key species, such as small blue butterfly. Ongoing. Lead contact: Biodiversity Manager

CG 3.04 Ensure all chalk grassland SINCs managed by the LBS are covered by management plans by 2012. Goal: 8 sites Lead contact: Biodiversity Manager

CG 3.05 Bring all chalk grassland SINCs into Higher Level stewardship by 2013. Goal 8 sites. Lead contact: Biodiversity Manager

CG 4.01 Work with golf course managers to identify opportunities to create new areas of chalk grassland managed for wildlife. Goal: 2ha by 2015. Lead contact: Biodiversity Manager

CG 4.02 Protect additional areas of potential calcareous grassland by designating 2 new sites as SINCs by 2012, Queen Mary's Park and Carshalton Park.
Goal: 6ha. Lead contact: Biodiversity Manager

Relevant Action Plans

Local Plans
Woodland and Scrub; Parks and Open Spaces; Gardens and Allotments; Bats

London Plans
Woodland; Private Gardens; Churchyards and Cemeteries; Parks, Amenity Grasslands and City Squares; Wasteland; Railway Linesides Audit; Farmland Audit; Small Blue (Cupido minimus) Species Action Plan 2000

National Plans
Lowland Calcareous Grassland; Calcareous Grassland Habitat Statement; Surrey Chalk Grassland and Scrub HAP (currently under review); Small Blue Butterfly Species Action Plan (Surrey) 2004

Key References

Barnes R., Britton B., Yarham I.,1993; Nature Conservation in Sutton, Ecology Handbook 22, London Ecology Unit

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Abbreviations

BC – Butterfly Conservation

DCMP/OSD – Downlands Countryside Management Project/Old Surrey Downs

GIGL – Greenspace Information for Greater London

GLA – Greater London Authority

LBS – London Borough of Sutton

LDF – Local Development Framework

SNCV – Sutton Nature Conservation Volunteers

Contact

The lead for this Habitat Action Plan is the London Borough of Sutton

Hendryk Jurk
Biodiversity Manager
London Borough of Sutton
24 Denmark Road
Carshalton
Surrey SM5 2JG
tel: (020) 8770 5000
email: biodiversity@sutton.gov.uk

Rivers & Wetlands

River Wandle © Environment Agency

"We forget that the water cycle and the life cycle are one."

Jacques Cousteau, Oceanographer

1. Aim

- To maintain and enhance existing areas of rivers and wetland for biodiversity throughout the Borough
- To survey and monitor rivers and wetlands to determine their ecological status.
- To promote the importance of rivers and wetlands for biodiversity.

2. Introduction

Within Sutton this group is represented by a broad range of aquatic habitats including rivers and streams, ponds, lakes, reed beds, and even swamps and marsh. Alongside the dominant habitat type may be a mosaic of different wetland habitats, for example, an area of open water may have a reed bed at one end; or an area of wet grassland adjacent to a watercourse. They all have in common surface water or a water table that is near or above ground level for most of the year.

3. Current Status

3.1 Area & Distribution

3.1.1 Rivers

The main river in Sutton is the River Wandle. It is an example of a ground-water fed chalk river. The river enters the Borough east of Waddon Ponds and flows west and then northwards to join the Thames at Wandsworth. Of its total 9 miles (14 km) length, a little less than 4 miles (5.9km) comprises the Sutton extent. In the west of the Borough lie the Beverley Brook and its tributary the Pyl Brook. The Beverley Brook joins the River Thames at Barnes.

3.1.2 Lakes & ponds

Lakes are defined as areas of water greater than 2 ha. There are a number of artificial lakes and ponds of varying sizes throughout the Borough. The larger lakes are a result of gravel extraction. Artificial lakes have been created at Worcester Park and Beddington Farmlands. The lake, islands and shores at Beddington Farmlands benefit from ecological management constraints for the enhancement of key bird species, such as little ringed plover *Charadrius dubius*, and redshank *Tringa totanus*.

There is no accepted definition of a pond but these are generally recognised as small water bodies, less than 2ha. Ornamental ponds can be found at Beddington Park and Carshalton Ponds, providing roosting and nesting habitat for familiar species of waterfowl, such as tufted duck *Aythya fuligula*, Canada geese *Branta canadensis*, mute swans *Cygnus olor*, mallard *Anas platyrhynchos*, coot *Fulica atra* and moorhen *Gallinula chloropus*.

Ponds that are actively being managed for nature conservation can be found at Sutton Ecology Centre and Anton Crescent Wetland. Thousands of school children visit the Ecology Centre every year, and carry out pond-dips to discover smooth newts, common frogs and toads, and invertebrates such as dragonflies and damselflies.

3.1.3 Marsh & Swamp

Marsh vegetation establishes where the water table is close to the surface for most of the year, but does not usually flood above ground level. We tend to associate swamps with the Everglades in Florida, USA; however in the UK swamp vegetation exists where the water table is at or above the surface for most of the year. A complete audit of these habitat types in Sutton has not been carried out. There are limited areas of swamp and marsh in the Borough often relegated to the margins of lakes, ponds or streams. A small area of relict marshland exists in Beddington Park, containing typical species such as great pond-sedge *Carex riparia*, and great hairy willow herb *Epilobium hirsutum*.

3.1.4 Reed beds

These habitats are characterised as wetlands, dominated by stands

of common reed *Phragmites australis*, where the water table is at or above ground level for most of the year. It is the dominance of reed that distinguishes this habitat type from marsh and swamp. Although not large in area, all are less than 1 ha; they are amongst the most important habitats for breeding birds in the UK. Artificially planted reed beds exist at a number of sites; 0.25 ha at Anton Crescent Wetland, and a tiny area at the Sutton Ecology Centre. The reed bed at Spencer Road Wetland developed on long abandoned commercial watercress beds. In future the area of reed beds will hopefully increase with areas currently targeted for creation at Beddington Farmlands.

3.1.5 Carr

Carr is swampy woodland often found in association with marshes. Where this habitat type exists, for example at Anton Crescent Wetland and Beddington Farmlands, it occurs together with areas of open water or reed beds that form a mosaic of wetland habitats.

3.2 Trends

3.2.1 Rivers and streams

Sutton is fortunate in having a substantial stretch of one of the finest chalk rivers in the capital. Historically, water abstraction from the River Wandle has led to low flow conditions along the river. It is now artificially supplemented by input at Carshalton Ponds, from sources further downstream, to augment the natural flow. Low flow conditions, combined with predicted climate change of drier summers, and future demands for water, will almost certainly increase pressure on the River.

Significantly, this type of spring fed chalk-river is categorised as among the most biologically rich, and productive of all habitats. This is a product of clear water, moderate nutrient levels, and a gravel substrate, providing ideal conditions for a diverse community of submerged and waterside plants to become established. This in turn supports a rich and diverse range of invertebrates and fish species. Uncommon plant species for London such as marsh ragwort *Senecio aquaticus* and opposite-leaved pondweed *Groenlandia densa* occur along the River Wandle. Both water cress *Rorippa nasturtium aquaticum* and fools water cress *Apium nodiflorum* can be found forming extensive beds. Planted species such as royal fern *Osmunda regalis*, a London rarity, in the Grange add to the biodiversity of the watercourse. Recent releases have occurred of captive bred brown trout *Salmo trutta* and salmon *Salmo* spp. by the Environment Agency and the Wandle Trust to augment the existing fish population.

Until recently urban development right up to the waterside, had altered the structure of the natural course of rivers and streams. This decrease in the amount of available flood plain, and increased canalisation, has had detrimental impacts by removing valuable habitat for biodiversity. However, even in low flow rivers like the Wandle, the potential of flooding is leading to a significantly more cautionary approach being applied. Future development along the

riverbanks will have benefits for wildlife. This recent reversal in the use of hard engineering of riverbanks has had a positive effect on water voles *Arvicola terrestris*, encouraging their dispersal by providing burrowing opportunities. Insensitive weed-cutting and bank management to 'tidy up' nature means the loss of marginal habitat, important for chalk river biodiversity. The current paradigm to 'tidy up' nature often conflicts with the aims of nature conservation.

Notably, both biological and chemical water quality continues to improve. Better sewage treatment and better quality discharges, particularly relevant in Sutton from sites such as Beddington Farmlands; has led to a reduction in the amount of polluting chemicals, such as phosphorus, entering rivers causing negative impacts from eutrophication.

Indicators of a cleaner Wandle are the established breeding populations of declining bird species, such as kingfisher *Alcedo atthis*, and grey wagtail *Motacilla cinerea*, a species in moderate decline.

3.2.2 Lakes and ponds

There is a number of impermanent water bodies located throughout the Borough. Although declining, Sutton has a large area of old style sewage treatment works that provide sludge lagoons and flooded fields, attracting a variety of migratory and transient birds. These wet habitats are in decline, but are being offset by habitat creation schemes, such as lakes at Beddington Farmlands, and Worcester Park development.

3.2.3 Other habitats

Reed beds, swamp, marsh and carr cover a tiny proportion of Sutton's land surface. The tendency is for these areas to progressively dry out as they develop into woodland and scrub, by the process of succession. Where these habitats remain they do so primarily as a consequence of active management for conservation.

4. Specific Factors Affecting the Habitat

- Abstraction leading to low flows, increased sediment build up, with loss of current-loving species
- Invasive species leading to loss of native species and habitats
- Pollution
- Damage to riparian species and habitats by weed-cutting and bank clearance
- Impact of pressure of development leading to habitat loss including trend to have paths along both banks
- Historical modification of the river course leading to reduction in diversity of physical habitat features of value to wildlife
- Disturbance of species due to vandalism

- Rubbish deposition and accumulation
- Rising cost of development within the flood plain
- Successional processes

5. Current Action

5.1 Legal Status

Chalk rivers and reed beds are recognised as a priority habitat under the UK Biodiversity Action Plan. Habitat statements have been produced for marsh and swamp, and rivers and streams. Statutory protection has been applied at five Local Nature Reserves with wetland elements within the Borough, at Wandle Valley Wetland, the Sutton Ecology Centre, Spencer Road Wetland, Anton Crescent Wetland and Wilderness Island. In addition, Sutton has afforded strong protection to rivers and wetlands against the adverse effects of built development, through non-statutory nature conservation designations in the Local Development Framework.

Sutton has secured further protection and significant enhancement of sites for wetland conservation, through formal management agreements at key sites, such as the former Worcester Park Sewage Treatment works, Beddington Farmlands and Anton Crescent Wetland.

The Environment Agency exercises a pollution control function over watercourses in the UK.

5.2 Mechanisms targeting the habitat

A considerable amount of management is carried out by individuals, committed voluntary and non-statutory organisations, often in partnership with Sutton Council. This small-scale enhancement work, including regular litter clearances along the Wandle, reed cutting, removal of vegetation to maintain areas of open water, silt removal, and re-profiling of banks, has contributed greatly to the maintenance and enhancement of these natural habitats.

The majority of areas of reed beds are subject to programmed management. The largest privately owned land usage at Beddington Farmlands is subject to a Conservation Management Plan. This involves creation of new wetland habitat including lakes, reed bed and marginal aquatic habitat.
Future implications for water resources require a holistic approach to catchment management, with land use practices that reduce rapid runoff and peak flood flows, enhance aquifer recharge, and restore the natural function of river and flood plain. The Water Framework Directive requires all inland and coastal waters to reach "good status" by 2015. It will do this by establishing a river basin district structure, within which demanding environmental objectives will be set, including ecological targets for surface waters.

6. Flagship Species

Common Name	Latin	Brief Description
Sticklebacks	Three-spined stickleback: *Gasterosteus aculeatus* Ten-spined stickleback: *Pungitius pungitius*	Two species are found in Sutton. The three-spined stickleback is one of the most familiar fish of Britain's freshwater streams and ponds.
Brown trout	*Salmo trutta*	A distinctive light brown fish with silvery sides and pronounced black spots on the back. An indicator species of the unpolluted nature of the River Wandle.
Watercress	*Rorippa nasturtium-aquaticum*	A native species - watercress was grown commercially alongside the Wandle well into the last century.
Kingfisher	*Alcedo atthis*	Historical population decline but now recovering. Vulnerable to habitat degradation through pollution or unsympathetic management of watercourses.
Grey wagtail	*Motacilla cinerea*	Often seen along the Wandle and more colourful than its name suggests with a distinctive yellow breast and under-tail.
Water vole	*Arvicola terrestris*	It is suggested that this species no longer inhabits Sutton's waterways. A London-wide project seeks to reintroduce this charismatic mammal.

7. Objectives and Actions

Vision Statement: The London Borough Sutton contains the River Wandle, Pyl Brook and Beverly Brook. Important wetland sites, including reed beds, exist adjacent to the Wandle and Pyl Brook. 4 wetland sites are designated as Local Nature Reserves.

This Action plan aims to

- To maintain and enhance existing areas of rivers, ponds and wetlands for biodiversity throughout the Borough
- To survey and monitor rivers and wetlands to determine their ecological status.
- To promote the importance of rivers and wetlands for biodiversity.

Targets:

RW 1 To maintain the extent of existing wetlands and riparian habitats in LB Sutton. Baseline of Standing Water: 22ha (GIGL data 2006)

RW 2 To improve the condition of rivers and wetlands for nature conservation. Target: 0.7km at the River Wandle and 0.2km at the Beverly Brook by 2015.

RW 3 To promote the importance of rivers and wetlands in the Borough for biodiversity and the need for protection

RW 4 To develop nature conservation areas at rivers and wetlands. Give priority to identified opportunity areas at Wandle Valley Wetland and Mill Green. Target: 2 new/ improved wetland/ standing water sites by 2015.

Actions:

RW 1.01 Survey wetland habitats to identify key areas of importance, invasive species problem areas and areas of opportunities by 2012. Share results with GIGL to update opportunity maps. Lead contact: Biodiversity Manager; Additional contact: Wandle Trust

RW 1.02 Carry out monthly riverfly monitoring with partner organisations. Ongoing. Lead Partner: Wandle Piscators.

RW 1.03 Ensure LDF has relevant policies to protect, create and enhance rivers and wetlands. Ongoing. Lead contact: Biodiversity Manager

RW 1.04 Investigate feasibility to record wildlife pond resource in private gardens within the Borough by 2012. Lead contact: Biodiversity Manager

RW 2.01 Ensure that all river and wetland SINCs are managed for biodiversity. Management Plans in place by 2015. Goal: 11 sites. Lead contact: Biodiversity Manager

RW 2.02 Develop River Wandle Catchment Plan by 2015. Lead Partner: Wandle Trust.

RW 2.03 Work with partner organisations to create backwater habitats to improve habitats for fish and water vole re-introduction at the River Wandle. Ongoing. Target: create 2 new habitats. Lead contact: Biodiversity Manager

RW 2.04 Implement a strategy to remove invasive species with partner organisations. Develop invasive species map by 2011 and update regularly. Lead Partner: Wandle Trust

RW 2.05 Identify opportunities to remove obstacles for fish movement in the rivers. Ongoing. Lead Partner: Environment Agency

RW 2.06 Carry out regular river work parties to improve condition of the River Wandle and raise awareness. Goal: 0.4km from Grove Park and 0.3km in Hackbridge by 2013. Lead Partner: Wandle Trust

RW 2.07 Investigate funding opportunities to implement biodiversity improvement on the Beverly Brook in Cuddington Recreation Ground and Worcester Park Green Lanes by 2014. Lead contact: Biodiversity Manager

Goal: restore 0.2 km of river bank.

RW 3.01 Promote the value of rivers & wetlands for wildlife through talks, guided walks and events. Run 15 events to raise awareness of river and wetland habitats by 2015. Lead contact: Biodiversity Manager; Additional contact: Wandle Trust

RW 4.01 Ensure Council Development Control Officers are appropriately trained to safeguard and enhance biodiversity. Provide updated information annually to enable the Council to fulfil its Biodiversity duty and encourage the creation of wildlife areas in developments, e.g. sustainable urban drainage systems.

Lead contact: Biodiversity Manager

RW 4.02 Ensure SUDS creation takes into account opportunities for habitat creation. Ongoing Lead contact: Biodiversity Manager

RW 4.03 Encourage garden owners and schools to create wildlife ponds. Hold 5 events and workshops to encourage groups not usually involved in nature conservation by 2015. Lead contact: Biodiversity Manager

RW 4.04 Investigate possibilities to restore St. Philomena's Pond by 2011. Goal: 1 pond. Lead contact: Biodiversity Manager

RW 4.05 Investigate funding opportunities to restore the round pond in Beddington Park by 2015. Goal: 1 pond. Lead contact: Parks Manager

RW 4.06 Monitor pond restoration work and reed bed creation at Beddington Farmland. Ongoing. Lead contact: Biodiversity Manager

Relevant Action Plans

Local Plans

Woodland and Scrub; Parks and Open Spaces; Chalk grassland; Private Gardens; Allotments; Bats

London Plans

Ponds; Lakes and Reservoirs; Bats; Water Vole; Grey Heron; Sand Martin; Black Poplar

National Plans

Chalk Rivers; Eutrophic Standing Waters; Wet Woodland; Fen, Marsh and Swamp; Reed beds; Rivers and Streams; Standing Open Water and Canals; Pipistrelle Bat; Water Vole

Key References

Barnes R., Britton B., Yarham I.,1993; Nature Conservation in Sutton, Ecology Handbook 22, London Ecology Unit

Bromley Biodiversity Partnership, 2002; The Future of Darwin's Wildlife in Bromley The Bromley Biodiversity Action Plan 2nd Edition 2003-5

Cox M., Straker V., Taylor D., (eds), Proceedings of the International Conference, Wetlands Archaeology and Nature Conservation, 1994, London HMSO

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Scott Wilson Business Consultancy, Sutton Open Space Strategy, Draft Report v.1 for London Borough of Sutton, January 2005

Websites: Environment Agency, UK BAP, London Wildlife Trust, DEFRA, London Biodiversity Partnership

Abbreviations

CAMS – Catchment Abstraction Management Strategy

EA – Environment Agency

GIGL – Greenspace Information for Greater London

GLA – Greater London Authority

LBS – London Borough of Sutton

LDF – Local Development Framework

LWT – London Wildlife Trust

SNCV – Sutton Nature Conservation Volunteers

Contact

The lead for this Habitat Action Plan is the London Borough of Sutton

Hendryk Jurk
Biodiversity Manager
London Borough of Sutton
24 Denmark Road
Carshalton
Surrey SM5 2JG
tel: (020) 8770 5000
email: biodiversity@sutton.gov.uk

Private Gardens

Wildlife Garden © Centre for Environmental Initiatives

"Stay gardening wild and sing a few songs while you're doing it!"

Michaela Strachan's gardening philosophy

1. Aim

- To maintain and expand the biodiversity of gardens in the Borough
- To maintain the extent of privately owned green space
- To increase awareness of the role gardens play in supporting wildlife

2. Introduction

The importance of private gardens to nature conservation cannot be underestimated. Private gardens and allotments had been considered together in the BAP 2005 -2010 because these habitats exhibit similarities and are artificial environments. However, it became apparent that the approach to maintain, improve and extend these habitats through actions has to be different for allotments and private gardens. Garden habitats require considerable manpower and cultivation to maintain the assemblage of ornamental and cultivated plants that characterise them. Private gardens are defined by their ownership or function and do not have a distinctive community, although traditionally we associate them with areas of grass, trees, flowerbeds, food growing etc. They can include elements of other community types such as woodland and chalk grassland in microcosm. Areas of adjacent gardens can have continuity and, provided they are managed in a wildlife friendly way, can form a green corridor for wildlife.

These areas of land adjacent to our homes provide us with opportunities to experience nature at first hand. We can explore the interdependence of plants and animals, or just relax and enjoy the profusion of colour, scents and wildlife-rich interest that results.

3. Current Status

3.1 Area & Distribution

Nationally it is estimated that there are half a million hectares of domestic gardens. Analysis of aerial photographs taken in 1981 estimated that private gardens covered 20% of Greater London, equivalent to 30,000 hectares. There are no accurate estimates of the land covered by private gardens in Sutton.

Gardens and allotments occur on every soil type represented in the Borough, and therefore do not have a specific ecology. Larger gardens occur predominantly in the south of the Borough, and have the most potential for biodiversity in terms of variety of habitats. Smaller gardens occur in the north.

There has been little co-ordinated study of the extent and variety of garden and allotment habitats nationally or regionally, and so the current status of these sites is unknown.

3.2 Trends

Gardens are managed for aesthetic or functional reasons, rather than in an effort to conserve a specific community type. However, recently there has been a shift in emphasis, whilst still maintaining their functionality, to gardening for the benefit of wildlife.

Wildlife-friendly gardening can have enormous benefits for all manner of native plants and animals. However, that is not to say that non-native species do not have a place in our gardens. It is widely recognised that these non-natives or as they are now known 'neophytes' i.e. plants that have arrived in the last 500 years, can have positive associations for native animals e.g. barberry *berberis* spp. or blackcurrant *Ribes nigram* attract a host of bees and moths to their nectar, and provide a food source for birds.
Lavender *Lavendula* spp, benefits butterfly and bees.
Nasturtium tropaeolum cvs. is excellent for bumble bees and ice plant *Sedum spectabile* is beneficial for late pollinators such as butterflies, bees and hoverflies.

Although large gardens are regarded as being the best for wildlife, it is important to recognise the incredible value of all gardens whatever their size. It is acknowledged that even the smallest of gardens can have a strong biodiversity interest. The current trend in wildlife gardening can even extend to small gardens or window boxes. The collective effect of groups of interlinking gardens together can have a 'nature reserve' effect, even if the gardens are individually small, the biodiversity interest over the whole area could be immense. This applies especially when private gardens back onto parks, nature areas and railway lines to complement existing wildlife habitats.

Gardens can play a role in helping to stop the decline of threatened species such as house sparrow *Passer domesticus*, starling *Sturnus vulgaris*, stag beetle *Lucanus cervus*, common frog *Rana temporaria* and bumble bee *Bombus* spp., and are a refuge for

threatened wildlife as well as wildlife in general.

The increasing pressure to develop in urban areas has meant that large gardens are often used for infill or backland development.

Feeding of garden birds is now a multi-million pound business that has important implications for the status of many garden birds. Gardens also provide important habitats for frogs and toads.

4. Specific Factors Affecting the Habitat

- Direct loss of habitat through infill or backland development
- Increasing popularity of wildlife gardening
- Increased awareness of the contribution of wildlife gardening to biodiversity
- Inappropriate management and damage to habitat and species from pesticide and fertiliser application

5. Current Action

5.1 Legal Status

The majority of protection comes from planning policies in the Local Development Framework. This includes a policy preventing the loss of back garden land in established residential areas. Many trees and hedgerows are protected by Tree Preservation Orders. Protected species using gardens and allotments include the stag beetle, badger and bats (all species). All buildings associated with gardens, but in particular houses, provide many species of bat with potential roosts.

5.2 Mechanisms targeting the habitat

No comprehensive audit of management for the benefit of wildlife has been carried out within the Borough, although it is recognised that many residents already engage in wildlife gardening to some extent. There is a broad range of measures that can be implemented on a small scale to benefit a wide range of species, which when combined with the often considerable resources available, can deliver intensive ecological management on the small scale. There is great potential and scope to benefit biodiversity. Various events to encourage garden owners to build and put up bat and bird boxes have shown that there is great public interest in providing habitats in private gardens. Sutton celebrates gardens as wildlife habitat through events such as ‘Sutton in Bloom’ Best Wildlife Garden category.

National surveys are carried out such as the Royal Society for the Protection of Birds annual *Big Garden Birdwatch* (500,000 people participated in 2009); and the Mammals Trust is gathering information on mammals in gardens through its *Living with Mammals* survey.

6. Flagship Species

Common Name	Latin	Brief Description
Pipistrelle bat	Common pipistrelle *Pipistrellus pipistrellus* Soprano pipistrelle *Pipistrellus pygmaeus*	There are two species in Sutton. Pipistrelles are the smallest European bats often seen flying around gardens at dusk. They have dark red/brown fur and a characteristic black/brown wing membrane.
Stag beetle	*Lucanus cervus*	Sutton is a hotspot for stag beetles, with gardeners regularly turning up the large larvae whilst digging amongst deadwood.
Swifts	*Apus apus*	Often viewed in flight over our gardens emitting its characteristic 'scream' call. It has long, scythe-like wings and a short, forked tail.
House sparrow	*Passer domesticus*	Once a common bird, now declining in the UK.
Robin	*Erithacus rubecula*	The UK's favourite bird and gardener's companion.
Hedgehog	*Erinaceus europaeus*	Possibly one of the most popular species in the capital. Renowned for eating slugs. Absent from central London. Threats include road traffic, steep-sided ponds, and the consumption of slugs that are dying from slug pellets.
Common toad	*Bufo bufo*	Common toads occur in a broad variety of

		habitats, including gardens. The most obvious feature that distinguishes this species from frogs is its warty skin.
Smooth newt	*Triturus vulgaris*	This newt is, with the common frog Britain's most widespread amphibian. Often found in garden ponds, particularly where there are no fish, they are also found under refuges such as logs or stones.
Song thrush	*Turdus philomelos*	A familiar and popular garden songbird whose numbers are declining seriously.

7. Objectives and Actions

Vision Statement:

Private Gardens play a vital role to connect Sutton's green spaces and wildlife sites.

This plan aims

- To maintain and expand the biodiversity of gardens in the Borough
- To maintain the extent of privately owned green space
- To increase awareness of the role gardens play in supporting wildlife

Targets:

PG 1 To educate and encourage owners to support and develop wildlife back gardens

PG 2 To protect wildlife back gardens from development

PG 3 To encourage new developments to include wildlife friendly landscaping and design

Actions:

PG 1.01 Give talks and run workshops to community groups to encourage wildlife gardening and other measures, such as removing paved areas. Goal: 15 by 2015. Lead Contact: Biodiversity Manager

PG 1.02 Run 5 workshops on creating wildlife habitat for hedge rows, pond creation, wildflower meadows, birds to give practical guidance and support by 2015. Goal: 5 workshops by 2015 Lead Contact: Biodiversity Manager

PG 1.03 Run 20 family events to develop interest and support for wildlife by 2015. Goal: 20 events by 2015. Lead Contact: Biodiversity Manager

PG 1.04 Publish 2 press releases annually to encourage interest in wildlife gardening. Lead Contact: Biodiversity Manager

PG 1.05 Educate 5,000 primary and secondary school children in nature conservation subjects by 2015. Goal: 5,000 children by 2015. Lead Contact: Biodiversity Manager

PG 1.06 Encourage members of the public to participate in national species reporting events and to share data with GIGL. Ongoing. Lead Contact: Biodiversity Manager

PG 1.07 Run annual wildlife garden competition as part of Sutton in Bloom and London in Bloom competition. Ongoing. Lead Contact: Biodiversity Manager

PG 1.08 Develop Sutton Ecology Centre as exhibition gardens for biodiversity by 2012. Lead Contact: Biodiversity Manager

PG 2.01 Discourage back garden development considered to be of ecological value through the planning process. Ongoing. Lead Contact: Biodiversity Manager

PG 2.02 Ensure LDF has relevant policies to protect back garden. Ongoing. Lead Contact: Biodiversity Manager

PG 2.03 Investigate feasibility to record wildlife back garden resource within the Borough by 2012. Lead Contact: Biodiversity Manager

PG 3.01 Identify resources to produce wildlife gardening leaflets for individuals, schools and businesses by 2011. Lead Contact: Biodiversity Manager

PG 3.02 Ensure LDF has relevant policies to create wildlife areas within housing developments. Ongoing. Lead Contact: Biodiversity Manager

PG 3.03 Ensure Council Development Control Officers are appropriately trained to safeguard and enhance biodiversity. Provide updated information annually to enable the Council to fulfil its Biodiversity

duty and encourage the creation of wildlife areas in housing developments, e.g. scrub/ orchard areas in new developments.
Lead Contact: Biodiversity Manager

Relevant Action Plans

Local Plans
Woodland and Scrub; Chalk Grassland; Rivers and Wetlands; Bats

London Plans
Chalk Grassland; Reptiles; Bats; House Sparrow; Grey Heron; Stag Beetle; Mistletoe; House Martin; Swift; Humble Bumble and Exotic Flora statements.

National Plans
Built Up Areas and Gardens; Urban; Long tongued Bumble Bee; Stag Beetle.

Key References
Barnes R., Britton B., Yarham I.,1993; Nature Conservation in Sutton, Ecology Handbook 22, London Ecology Unit

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Mayor of London 2002, Connecting with London's nature. The Mayor's Biodiversity Strategy. Published by Greater London Authority July 2002

Websites: London Wildlife Trust, London Biodiversity Partnership, Sefton Coast Partnership

Abbreviations
GIGL – Greenspace Information for Greater London

GLA – Greater London Authority

GSSN – Greener Schools Support Network

LBS - London Borough of Sutton

LDF - Local Development Framework

SOGG – Surrey Organic Gardening Group

SNCV – Sutton Nature Conservation Volunteers

WLUWG – Wildlife and Land Use Working Group

Working Group – a consortium of groups

Contact

The lead for this Habitat Action Plan is the London Borough of Sutton

Hendryk Jurk
Biodiversity Manager
London Borough of Sutton
24 Denmark Road
Carshalton
Surrey SM5 2JG
tel: (020) 8770 5000
email: biodiversity@sutton.gov.uk

Allotments

"Stay gardening wild and sing a few songs while you're doing it!"

Michaela Strachan's gardening philosophy

1. Aim

- To maintain and expand the biodiversity of allotments in the Borough
- To increase awareness of the role allotments play in supporting wildlife

2. Introduction

Allotments play an important role in providing green spaces and wildlife habitats. Private gardens and allotments had been considered together in the BAP 2005 -2010 because these habitats exhibit similarities and are artificial environments. However, it became apparent that the approach to maintain, improve and extend these habitats through actions has to be different for allotments and private gardens. Community gardens within school grounds are also covered by this Allotment Action Plan.

Allotment habitats are usually defined by their primary use for cultivation. Unlike farm habitats, allotments represent a mosaic of different small habitat patches that form a habitat variety that provides shelter and food sources for mammals, birds and reptiles. Areas of longer grass, small ponds, hedgerows and numerous composting heaps add to the variety.

3. Current Status

3.1 Area & Distribution

The Borough's 36 allotment sites cover approximately 47 ha. This equates to 1% of the Sutton's land surface.

Allotments do not have a specific ecology as they do occur on every soil type. However, wildlife value of some allotment sites is directly influenced by adjacent wildlife habitats, such as Roundshaw Allotments on Roundshaw Downs and Bowmans Meadow Allotments next to the River Wandle. Different occupation and cultivation levels of the plots mean that these habitats undergo a constant change as the form of management.

There has been little co-ordinated study of the extent and variety of allotment habitats nationally or regionally, and so the current status of these sites is unknown.

3.2 Trends

Allotments are managed for food growing and other cultivation. A current trend for increased local food growing threatens existing wildlife areas on allotment sites. However, current public interest in wildlife friendly gardening does not only apply to private gardens but also allotments.

Wildlife friendly food growing can provide food sources for garden birds and invertebrates, providing pesticides are avoided.

Compost heaps can provide over wintering sites for species like hedgehog *Erinaceus europaeus*, slowworm *Anguis fragilis* and toads *Bufo bufo*. In turn, cultivation of plants that attract invertebrates and the usual presence of earth worms will provide food sources for above species.

A number of ponds were created over the last 20 years in school gardens. Although, no comprehensive surveys have been carried out on these ponds, common newts *Triturus vulgaris* and a variety of invertebrates frequently occur.

4. Specific Factors Affecting the Habitat

- Direct loss of habitat through increased cultivation
- Increasing popularity of wildlife gardening
- Increased awareness of the contribution of wildlife gardening to biodiversity
- Inappropriate management and damage to habitat and species from pesticide and fertiliser application

5. Current Action

5.1 Legal Status

The majority of protection comes from planning policies in the LDF. This includes a policy to safeguard existing allotments. Protected

species using allotments include the stag beetle, badger, slowworms, common lizards and bats (all species).

5.2 Mechanisms targeting the habitat

No comprehensive audit of management for the benefit of wildlife has been carried on the Borough's Allotment sites. However, some species records have been received from individual allotment holders. Schools, daycentres, and allotment societies have created wildlife habitats, including features such as artificial nest boxes, deadwood habitats for invertebrates and garden ponds.

Further incentives for wildlife friendly gardening in schools will be delivered through the EcoSchools scheme.

Current trends to increase local food growing are demonstrated in Sutton's One Planet Food project and the establishment of a community farm. The community farm and a demonstration allotment at Westmead allotments will be tools for the Biodiversity Partnership to encourage allotments holders to implement wildlife friendly food growing.

6. Flagship Species

Common Name	Latin	Brief Description
Stag beetle	*Lucanus cervus*	Sutton is a hotspot for stag beetles, with gardeners regularly turning up the large larvae whilst digging amongst deadwood.
House sparrow	*Passer domesticus*	Once a common bird, now declining in the UK.
Robin	*Erithacus rubecula*	The UK's favourite bird and gardener's companion.
Hedgehog	*Erinaceus europaeus*	Possibly one of the most popular species in the capital. Renowned for eating slugs. Absent from central London. Threats include road traffic, steep-sided ponds, and the decline of slug populations due to slug pellets.
Common toad	*Bufo bufo*	Common toads occur in a broad variety of habitats, including

		gardens. The most obvious feature that distinguishes this species from frogs is its warty skin.
Slow worm	*Anguis fragilis*	The slow worm is actually a legless lizard. They may be found in gardens and compost heaps, where food is plentiful and the rotting plant material creates suitable warm conditions.
Song thrush	*Turdus philomelos*	A familiar and popular garden songbird whose numbers are declining seriously.

7. Objectives and Actions

Vision Statement:

Sutton has 36 allotment sites, totalling 2,300 individual plots. Allotments cover approximately 47ha (1% of Sutton's land surface) with a habitat mosaic that provides a variety of wildlife habitat. Current public demand for allotment plots is likely to reduce the natural areas within allotment sites but also provides opportunities to encourage wildlife friendly gardening.

This plan aims

- to maintain and expand the biodiversity of allotments in the Borough
- to increase awareness of the role allotments play in supporting wildlife

Targets:

A1 To maintain designated wildlife areas within allotment sites
A2 To encourage wildlife friendly food growing on allotments and school grounds

Actions:

A 1.01	Ensure LDF has relevant policies to protect allotments. Ongoing. Lead contact: Biodiversity Manager
A 1.02	Identify and map all designated wildlife areas on allotment sites by 2014. Lead contact: Biodiversity Manager
A 1.03	Include advice on wildlife friendly allotment plots in allotment guidelines by 2012. Lead Contact: Parks Manager
A 1.04	Improve woodland area at Benhill Allotments through habitat management (coppicing, bramble clearing) to establish ground flora by 2015. Goal: 0.1ha Lead contact: Biodiversity Manager
A 2.01	Incorporate wildlife friendly food growing in workshops, activities and courses run for adults, families and children on allotments, at schools and other locations such as Sutton's community farm. Goal: 8 by 2015. Lead Partner: EcoLocal
A 2.02	Encourage allotment holders to participate in national species reporting events through talks and workshops and to share data with GIGL. Lead contact: Biodiversity Manager
A 2.03	Develop an ecological friendly demonstration allotment at Westmead allotment by 2011. Lead Partner: EcoLocal
A 2.04	Run annual wildlife garden competition as part of Sutton in Bloom and London in Bloom competition. Ongoing. Lead Contact: Biodiversity Manager
A 2.05	Identify resources to produce a wildlife gardening leaflet for allotment holders by 2011. Link to PG 3.01. Lead contact: Biodiversity Manager; Additional contact: Eco Local
A 2.06	Encourage and support the creation of wildlife gardens in school grounds through the Eco Schools Scheme. Goal: 30 school gardens by 2012. Lead Contact: Biodiversity Manager. Additional contact: EcoSchools Officer

Relevant Action Plans

Local Plans
Woodland and Scrub; Chalk Grassland; Rivers and Wetlands; Bats

London Plans
Chalk Grassland; Reptiles; Bats; House Sparrow; Grey Heron; Stag Beetle; Mistletoe; House Martin; Swift; Humble Bumble and Exotic Flora statements.

National Plans
Built Up Areas and Gardens; Urban; Long tongued Bumble Bee; Stag Beetle.

Key References

Barnes R., Britton B., Yarham I.,1993; Nature Conservation in Sutton, Ecology Handbook 22, London Ecology Unit

Bromley Biodiversity Partnership, 2002; The Future of Darwin's Wildlife in Bromley The Bromley Biodiversity Action Plan 2nd Edition 2003-5

London Biodiversity Partnership 2004, Private Gardens Habitat Action Plan

Mayor of London 2002, Connecting with London's nature. The Mayor's Biodiversity Strategy. Published by Greater London Authority July 2002

Websites: London Wildlife Trust, London Biodiversity Partnership, Sefton Coast Partnership

Abbreviations

GIGL – Greenspace Information for Greater London

GLA – Greater London Authority

GSSN – Greener Schools Support Network

LBS - London Borough of Sutton

SOGG – Surrey Organic Gardening Group

SNCV – Sutton Nature Conservation Volunteers

WLUWG – Wildlife and Land Use Working Group

Working Group – a consortium of groups

Contact

The lead for this Habitat Action Plan is the London Borough of Sutton

Hendryk Jurk
Biodiversity Manager
London Borough of Sutton
24 Denmark Road
Carshalton
Surrey SM5 2JG
tel: (020) 8770 5000
email: biodiversity@sutton.gov.uk

Species Action Plan

Bats (All Species)

Pipistrelle bat © Hugh Clark

"On the bat's back I do fly
After summer merrily."
- William Shakespeare, The Tempest (Ariel at V, i)

1. Aim

- To maintain, enhance and extend suitable roosting, breeding and hibernation habitat for all species of bats.
- To increase public awareness and appreciation of bats and their ecology.

2. Introduction

Of the 50 species of native 'land' mammals found in the UK, 17 are bats. Bats regularly use the urban environment and two species of bat are often seen at dusk, albeit fleetingly. Many species of bat live in close proximity to humans, even roosting unobtrusively in our homes, and relying on them for their survival. Bats are the only mammals to have evolved powered flight. They are a member of the Order Chiroptera; meaning "hand-wing", which describes them perfectly, as it is the bones of the hand that have extended through evolution to produce a wing. They hunt by means of echolocation, a highly sophisticated sonar system. Their presence in an area is indicative of a healthy and diverse environment. Some species of bat assist us by consuming around 3000 midges in a night, helping to remove potential pests. These enigmatic and endearing mammals are worthy of our protection.

Surveying and monitoring of bats has developed since the availability of simple portable bat detectors that enable us to hear their calls; however, their complex lifestyle and difficulty of detection means that much of their ecology is still unknown. We are only able to give a very rough estimate of distribution and population sizes of UK species of bats.

This Species Action Plan (SAP) was developed for all Sutton's bat species, as the ecological requirements, and conservation problems faced by all of London's bats, are believed to be generally similar. Any measures proposed are likely to be of benefit to a number of species. Their ecological requirements encompass a range of roosting, breeding, and feeding sites, that preclude their association with any one habitat type, thus necessitating a stand alone SAP.

3. Current Status

3.1 Area & Distribution

Of the eleven species of bat recorded throughout London, six have been recorded in Sutton. It is highly likely that a seventh species (Brown long-eared bat *Plecotus auritus)* also occurs in the Borough. Of these only one species of Pipistrelle is considered relatively common. The species of bat found in Sutton are shown below, although because of our current lack of knowledge about distribution of these animals, there could be more.

Serotine *Eptesicus serotinus*

This bat is recorded as vulnerable in the UK. Within London it is described as rare. It is found mainly in the outer London boroughs, where it favours over-mature parkland, and various wetlands, as foraging habitat. Serotines are found in Sutton roosting in houses, although it is thought they may be declining.

Noctule *Nyctalus noctula*
The noctule is the UK's largest bat with a wingspan of up to 40 cm. Described as vulnerable and declining within the UK, it is nevertheless thought to be widespread in the Greater London area. However their high mobility may have led to an overestimation of their numbers. Noctules have been recorded in Sutton at Beddington Park and Beddington Farmlands. They primarily use trees as roost sites.

Leisler's Bat *Nyctalus leisleri*

This medium sized bat has been recently recorded in Mayflower Park. Leisler's bats are rare in London only occurring in some outer Boroughs. This species can be found roosting in houses and bat boxes, although it is naturally a forest bat.

Common pipistrelle *Pipistrellus pipistrellus* & Soprano pipistrelle *Pipistrellus pygmaeus*

These two distinct species were considered to be the same in the past. They were eventually recognised as two separate species following research into population, genetics and habits. *P. pipistrellus* are commonly referred to as the 45 kHz pipistrelle and *P. pygmaeus* as the 55 kHz pipistrelle because of the nature of their ultrasonic calls. The 45 kHz pipistrelle is thought to be the more common of the two species, although both species are widespread throughout the Greater London area, and are found in Sutton. They are frequently found

in the urban environment, favouring roosts in houses under eaves and soffit boards.

Daubenton's *Myotis daubentonii*

Daubenton's bat is a medium-sized species. It is widespread throughout Britain, often associated with water bodies such as rivers and canals. This species has been recorded at the Beddington Farmlands site and in Beddington Park.
.

Other species

There may be other species of bat in Sutton. Unfortunately, due to the difficulty of detection the status is yet to be established. It is likely that the brown long-eared bat *Plecotus auritus* also resides within Sutton. Due to the nature of its hunting methods (mainly passive listening), detection with a bat detector is extremely rare. It occupies deciduous and coniferous woodland and parks and even gardens in villages and cities but is not dependent on human settlements. Summer (nursery) roosts are often in tree holes, although they will occupy bird and bat boxes and on occasion will roost in buildings.

3.2 Trends

In the UK, several bat species are considered rare, and most are thought to be in decline. It is generally accepted that there are population declines in all of London's bats, although the picture is unclear, as little is known about the current status of most species. A national study between 1978 and 1993 estimated a 70% reduction in the population of the two common pipistrelle species. However, evidence from a national survey in 2003 suggests that for certain species, this trend may finally be in reverse. Further evidence suggests that both Horseshoe bats and Daubenton's bats are now increasing in numbers.

As part of a UK wide monitoring programme, the JNCC commissioned the Bat Conservation Trust to carry out monitoring of bat populations. Survey data for the UK's common pipistrelle population estimates that the species has increased significantly since 1998, at an annual rate of 14%. For the other three species surveyed, soprano pipistrelle, noctule and serotine, there was insufficient data to be able to establish any trend over the monitoring period.

Management of trees, often as a result of a misplaced sense of tidiness, or concerns over health and safety, has led to the removal of many suitable roost sites.

There is a general lack of awareness amongst planners, developers, and arboriculturalists about bat ecology, and their responsibilities under wildlife legislation, that is potentially furthering the decline of bats. However, awareness raising efforts are changing this trend and bat surveys are part of many planning applications in Sutton now. Sutton's tree contract also specifies that contractors have to comply with wildlife legislation.

The impact of climate change could have significant consequences for bats. Any temperature rise is likely to benefit bats, as it is recognised that diversity and numbers increase in the south. Severe winter temperatures could cause a problem however.

4. Specific Factors Affecting Bats

- Loss of roost and maternity sites
- Habitat fragmentation and loss of commuting corridors
- Lack of natural roosts particularly removal of standing deadwood or diseased trees
- Loss of biologically rich, unimproved grassland as foraging sites
- Reduced insect abundance and diversity associated with simplified habitat structure and reduced diversity of plant species e.g. amenity grassland
- Chemical treatment, using pesticides to kill food species, direct cause of death & herbicides killing prey host plants
- Although declining, invertebrate rich areas such as sewage farms provide considerable feeding areas
- Increased awareness has potential for positive and negative impacts
- Lack of awareness of bats and their protected status
- Wildlife gardening
- Impact of light pollution
- Increased use of built structures
- Predation by cats

5. Current Action

5.1 Legal Status

All bats and their roosts are protected under Schedule 5 of the Wildlife and Countryside Act 1981. This legislation has been supplemented and amended by the Countryside and Rights of Way Act 2000.

All species of bat and their roosts are also given protection under Schedule 2 of the Conservation (Natural Habitats &c) Regulations 1994.

Together the Act and Regulations make it illegal to intentionally kill, injure, or take, possess, or trade in bats, and prohibits interference with places used for shelter or protection, or intentionally or recklessly disturbing animals occupying such places, such as roosts. Case law suggests that roosts are protected whether or not the bats are present at the time.

5.2 Mechanisms targeting the species

The Bat Conservation Trust carries out research and monitoring to advance our understanding of the status, ecology, and habitat requirements of British bats.

A Natural England licence is required to undertake intrusive survey work of buildings and trees for all species of bat. A licence is also required to undertake

mitigation work that will affect any bat species, or its roost. No licence is required to carry out field surveys.

Volunteers from the London Bat Group and members of the London Borough of Sutton's Biodiversity Team regularly take members of the public on Bat Walks. Through a series of educational talks the status and ecology of bats is highlighted to schools and special interest groups. Bat boxes have been installed at the Lindbergh children's play centre and over 100 boxes have been distributed to the general public in bat box building events. Members of the public regularly ask for advice on the location of bat boxes in gardens and allotments, and this trend is increasing.

In addition, all Sutton's HAPs will take account of bats and through their implementation seek to maintain and enhance roosting, breeding, and feeding sites throughout the Borough.

6. Objectives and Actions

Vision Statement:

Bats regularly use structures and features in urban environment and 6 species have been recorded in Sutton, although it is likely that a seventh species occurs (Brown long-eared bat *Plecotus auritus*). This species action plan aims

- To maintain, enhance and extend suitable roosting, breeding and hibernation habitat and associated commuting and foraging areas for all species of bats.
- To increase public awareness and appreciation of bats and their ecology.

Targets:

B 1 Maintain, enhance, extend, and improve bat roosting opportunities and the connectivity between roosts and suitable commuting and foraging habitat for bats. Current level 7 recorded roosts. Target: Maintain current level of roost 7 sites (GIGL 2009).

Actions:

B 1.01 Identify key sites for bats in the Borough using data from environmental surveys for building developments. Input all available data on bats on to RECORDER database & share with GIGL. By 2013 Lead contact: Biodiversity Manager

B 1.02 Ensure LDF has relevant policies to protect bat populations and to protect, create and enhance their habitat. Ongoing. Lead contact: Biodiversity Manager

B 1.03 Raise awareness of legal responsibility and best practice to developers, planners, other Council departments to enable the Council to fulfil its Biodiversity duty and encourage the creation of wildlife areas in developments. Provide updated information annually through training events and team meetings. Lead contact: Biodiversity Manager

B 1.04 Raise awareness of bats and their ecological requirements through training events, guided walks and work shops for members of the public and community groups. Encourage installation of bat boxes in private gardens. Run 8 events by 2015. Or aim to reach 100 people by 2015. Lead contact: Biodiversity Manager

B 1.05 Manage Council-owned parks and open spaces with bats in mind, i.e. tree management, reduced light pollution and hedgerow management. Include management for bats in management plans of all identified important sites by 2015. Lead contact: Biodiversity Manager

B 1.06 Improve internal conditions in existing “bat bunker” to be suitable for bats by 2013. Lead contact: Biodiversity Manager

B 1.07 Encourage new developments to include roosting opportunities through the planning process. Ongoing. Lead contact: Biodiversity Manager

Relevant Action Plans

Local Plans
Woodland and Scrub; Parks and Open Spaces; Chalk grassland; Rivers and Wetlands; Gardens; Allotments

London Plans
Bats Species Action Plan; Woodland; Tidal Thames; Canals; Private Gardens; Wasteland; Reed bed; Churchyards and Cemeteries; Parks; Amenity Grasslands and City Squares; Open Landscapes with Ancient/Old trees Audit.

National Plans
Built Environment and Gardens; Pipistrelle bat.

Key References
Barnes R., Britton B., Yarham I.,1993; Nature Conservation in Sutton, Ecology Handbook 22, London Ecology Unit

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MKA Ecology; Beddington Annual Ecology Report 2009

Altringham J.D., 2003; British Bats, Collins

Schober, W & Grimmberger, E., 1993; Bats of Britain and Europe, Hamlyn.

Websites: Bat Conservation Trust; London Bat Group; Warwickshire Bat Group

Abbreviations

BCT – Bat Conservation Trust

GLA – Greater London Authority

GIGL – Greenspace Information for Greater London

LBS – London Borough of Sutton

LBBF - London Boroughs Biodiversity Forum

LWT - London Wildlife Trust

Contact

The lead for this Habitat Action Plan is the London Borough of Sutton

Hendryk Jurk
Biodiversity Manager
London Borough of Sutton
24 Denmark Road
Carshalton
Surrey SM5 2JG
tel: (020) 8770 5000
email: biodiversity@sutton.gov.uk

Glossary

Abundance
The degree and frequency of a species population, often indicative of the success it is experiencing in the wild.

Amenity grassland
Grassland that improves the quality of an area by contributing to the physical or material comfort of users (as places to picnic, walk, engage in leisure pursuits etc), and which increases the attractiveness or value of its geographic location.

Arboricultural
Arboriculture is the planting and care of woody plants, especially trees.

Baseline
A measurement, calculation, or location used as a basis for comparison in science.

Biodiversity
Biodiversity or biological diversity is the variety of life in all its different forms, which includes the myriad of plant and animal species and the range of habitats in which they live.

Biodiversity Action Plan
A plan that sets objectives and actions for the conservation of biodiversity, with measurable targets, following the UK Biodiversity Action Plan

Calcicolous
A plant that thrives in soil rich in lime.

Colonisation
Successful invasion of a new habitat by a species; the occupation of bare ground by soil by seedlings or sporelings

Conservation
Protection, management and promotion for the benefit of wild species and habitats, as well as the human communities that use and enjoy them.

Distribution
The geographical range of a taxon or group; the pattern or arrangement of the members of a population or group

Ecosystem
A community of organisms and their physical environment interacting as an ecological unit

Eutrophication
Over enrichment of a water body with nutrients, resulting in excessive growth of organisms and a reduction in oxygen.

Fauna
All the animal life in a particular region.

Flagship species
A species perceived favourably by the public for reasons of aesthetics or other value, used to promote and publicise habitat conservation.

Flora
All the plant life in a particular region.

Greater London
The geographical area encompassed by the 32 London boroughs and the City of London

Habitats
The area or environment where an organism or ecological community normally lives or occurs: *a fresh water habitat.*

Indicator species
A species indicative of an ecosystem or habitat. Their decline may indicate a disturbance that alters the ecosystem

Invertebrate
An animal, such as an insect or mollusc that lacks an osseous or cartilaginous spinal column.

Larvae
The newly hatched, wingless, often wormlike form of many insects before metamorphosis.

Local Nature Reserve
An area of land that is of special conservation interest and is of importance to both people and wildlife on a local level. LNR's are declared and managed by the owner of the site under the National Parks and Access to the Countryside Act 1949.

Mitigation
Any process or activity designed to avoid, reduce or remedy adverse environmental impacts likely to be caused by a development project. Mitigating factors are taken into account as a benefit on balance to offset against any perceived or demonstrable harmful impact

Monitoring

To keep track of systematically, with a view to collecting information i.e. to monitor the bear population of a national park. To test or sample, especially on a regular or ongoing basis.

Native
Originating, growing, or produced in a certain place or region; indigenous.

Non-native species
A species that does not occur or belong naturally to an area, but has become established and generates successfully in a new environment e.g. Japanese knotweed.

Pesticide
A chemical used to kill pests, especially insects.

Plant communities
A group of plants living and interacting with one another in a specific region under relatively similar environmental conditions.

Priority habitat
Sutton's priority habitats, identified by the Sutton Core Partners, cover both areas defined particularly by their vegetation - as in Chalk grassland - and areas defined by their land use, such as gardens and allotments. Currently, there are 6 Priority Habitats within this plan.

Priority species
These are species that are chosen for priority action in biodiversity action planning, because they are under particular threat or they are characteristic of a particular region.

Protected species: Certain plant and animal species are protected to various degrees in law, particularly the Wildlife and Countryside Act 1981 (as amended).

Range
The geographic region in which a plant or animal normally lives or grows.

Reintroduction
To artificially insert a species which has become extinct within its former range, often through captive breeding and release.

Relict
An organism, species or habitat type of an earlier time and climatic variety, surviving in an environment that has undergone considerable change, often by movement to more ‘inhospitable’ areas. For instance, some communities and species that existed during the last glacial period now exist at high altitude, the climates of which are analogous to the harsh conditions in which they thrived.

Red Data Book Species
These are species that are endangered, rare or vulnerable to extinction globally, nationally or locally, and are contained within catalogues that are published by the International Union for the Conservation of Nature (IUCN).

Riparian habitat
Habitat located on the banks of a river or stream.

Scrub
A growth or tract of stunted vegetation.

Semi-natural habitat
Habitat that has been modified or created by human activities, still holding species that occur naturally in the area, in which natural processes are the most significant force in their development.

Site of Borough Importance of Nature Conservation
Sites which are important in a Borough perspective; damage to these sites would mean a significant loss to the Borough.

Sites of Local Importance to Nature Conservation
Sites that are or may be of particular value to nearby residents or schools. Local sites are particularly important in areas otherwise deficient in nearby wildlife sites.

Sites of Metropolitan Importance for Nature Conservation
Those sites which contain the best examples of London's habitats, sites with rare species, rare assemblages of species, or which are of particular significance within large areas of otherwise built-up London, which are afforded the highest priority for protection.

Species
The group of animals, plants, fungi or micro-organisms that have the greatest mutual resemblance forming a reproductively isolated 'unit'. Commonly used as the smallest unit of taxonomic classification.

Species Action Plan
A targeted programme of measures and actions aimed at maintaining and enhancing a specific species. A Species Action Plan aims to identify a number of conservation objectives and specify actions for targeting the species to stabilise and improve its status, as well as detail the responsibilities for achieving those objectives, based upon knowledge of its ecological requirements.

Succession
The sequential development of plant or animal communities through time.

Survey
To undertake an inventory, look at and examine the attributes and condition of a site, area or region, usually in terms of the presence / absence and/or quality of the habitats and species.

Sustainable Development
Development that meets the needs of the present without compromising the ability of future generations to meet their own needs. It is often summed up by the phrases 'think globally act locally' and 'don't cheat your children'.

Sward
The grassy surface of an area of land.

Unitary Development Plan
Statutory plans produced by each borough, which integrate strategic and local planning responsibilities through policies and proposals for development and use of land in their area. Now superseded by Local Development Plans.

Wetland
Lowland areas, such as marshes and swamps that are saturated with moisture.

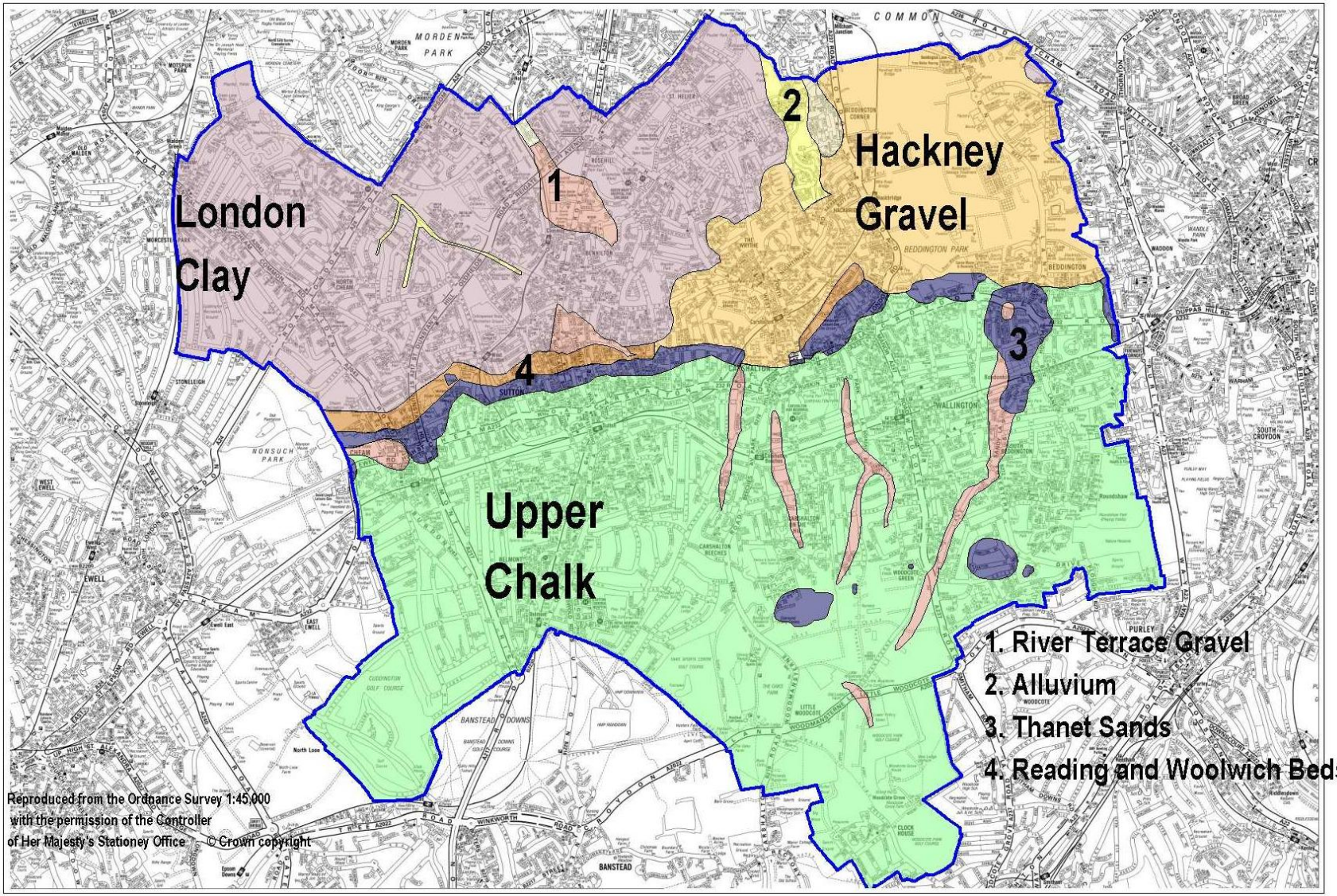
References
Connecting with London's Nature, The Mayor's Biodiversity Strategy 2002

Lincoln, R. J et. Al (1982). A dictionary of ecology, evolution and systematics. Cambridge University Press

Guest P., Frith M., Leigh-Hunt S., 1998; Biodiversity Action Plans getting involved at a local level, London Wildlife Trust

Richmond Biodiversity Group, 2005; The Local Biodiversity Action Plan for Richmond

Map: Underlying geological strata in Sutton



Map: Key nature conservation sites